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Original Articles.

ELBOW FRACTURES AND THE X-RAY.*

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There are, no doubt, those who think we have reached the highest excellence in the treatment of most fractures, but none who are familiar with the treatment and results of elbow fractures and *x*-ray disclosures will be deluded by the brilliant achievements of this surgical age. There are still more things in surgery and medicine than are dreamt of in our philosophy. My purpose is to present for consideration some mooted questions in the treatment of these elbow injuries and the importance of the facts disclosed by the *x*-ray in the future treatment of fractures.

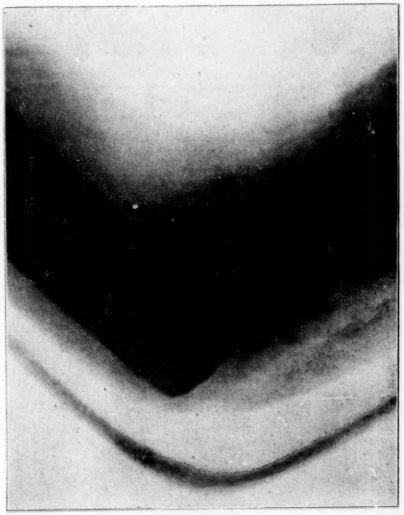
Allis, years ago, called attention to the importance of maintaining the normal angle of the humerus and ulna in the treatment of fractures of the lower end of the humerus, because of its influence on the carrying function of the arm. He treats the arm in extension because he believes it best maintains the fragments and the normal angle. This angle is greater than many suspect. With the arm extended in supination, a line drawn from the head of the humerus between the tuberosities will meet a transverse line through the carpus two inches inside of the styloid process of the ulna, which is the measure of the outward deviation of the forearm. If, in the adjustment of the fragments, the articular surfaces do not conform to this angle, the carrying power will be diminished. In any position with imperfect coaptation of fragments anchylosis is more certain. The assertion of Stimson that upward displacement of the internal condyle one-fourth of an inch will destroy the normal angle of deflection at the elbow is in itself a strong plea for more radical and reliable treatment in many of these cases

The maintenance of perfect coaptation of the fragments is not only difficult, but almost impossible without cutting down on the fragments and fixing them by wire or screws or clamp. The great majority of surgeons treat fractures of the condyles and supracondyloid with the arm at a right or acute angle. A few, conspicuously Allis and Roberts, prefer the arm in complete extension, believing that anchylosis is not so common. I have not treated these fractures in extension nor by operation, except compound, but I have seen more cases of anchylosis in this than in the flexed position.

Unlike most fractures, a perfectly accurate adjustment and coaptation of the fragments seem necessary to a perfect functional result. This object is so difficult of attainment that if more satisfactory and perfect results can be safely obtained by operative means the time has come when it should be more generally adopted.

I have two cases, with skiagraphs, which I desire to report as pertinent to the discussion.

Mrs. M., aged 65, fell on the sidewalk in May, 1898, producing a supracondyloid fracture of the humerus. The line of fracture, as shown by the skiagraph, traversed the upper border of the coronoid and olecranon fossæ. It did not seem difficult to replace and to maintain the fragments. The two skiagrams taken on the second and seventh day show that the fragments were not retained in as good position as desired. There



Case 1.—Supracondyloid fracture of right humerus.

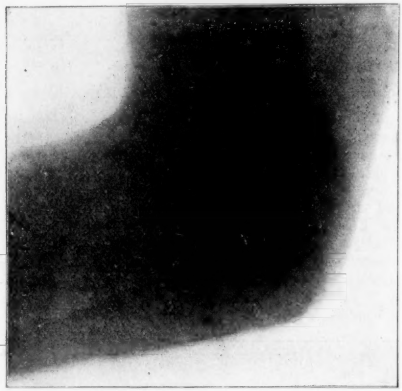
was splintering of the upper fragment posteriorly. The fragments were adjusted three times and the arm kept at a right angle in long posterior and short anterior splints. While flexion and extension are not perfect, the functional result is good. The fact that she can feed herself and dress her hair with ease is sufficient attestation of the fact. She experiences no discomfort nor inconvenience in its use. It is difficult to prevent rotation of the lower fragment in these cases.

Except with a laboring person, the evil of the gunstock position as to the impairment of the carrying function is much exaggerated.

Union, with as much overlapping as indicated, is a mechanical impediment to perfect flexion. Cheyne and

* Read at the Annual Meeting of the American Academy of Railway Surgeons, held at St. Paul, Minn., Sept. 5 and 6, 1900.

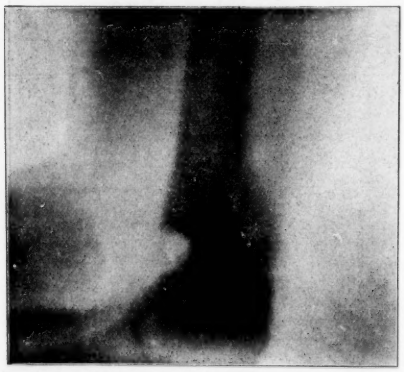
Burghard suggest that this defect may be overcome by treating the arm in acute flexion with a compress over the upper fragment. As most surgeons believe that the action of triceps and brachialis influences the position of the lower fragment, I may suggest that as no position



Case 1.—Mrs. M., October, 1900, three years and three months after injury. Arm looks well. Considerable antero-posterior thickening due to splintering, callus and undue prominence of upper fragment anteriorly with rotation of trochlea.

will relax both, tenotomy is appropriate and sometimes useful.

Case 2.—M. M. Y., aged 40, a brakeman, was, on June 21, 1900, on top of a refrigerator car with his legs in the ice chamber when the car went off the track and, throwing him against the side of the ice chamber, frac-

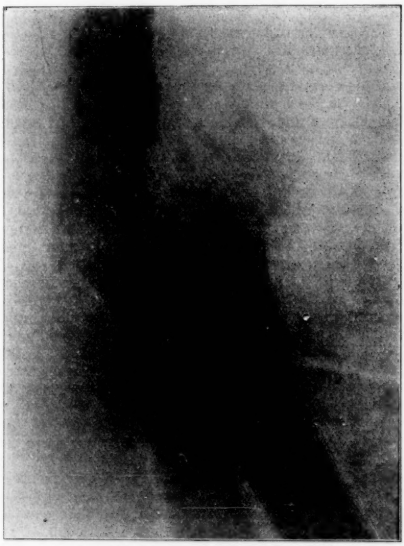


Case 1.—Mrs. M., October, 1900, three years and three months after injury. Longer exposure to *x*-ray. Callus not so well shown. Solid union; functional result very good.

tured the internal condyle of the left humerus, involving the joint freely. I saw him twelve hours after, when the parts were greatly swollen, making a satisfactory examination difficult even under chloroform. Four days later a skiagraph by Dr. Stover showed the fragments with the condyle displaced upward. The swelling was now much reduced, and under chloroform the fragment was easily adjusted and the arm treated at a right angle throughout. It was examined two or three times a week, but passive motion was not used until the end of the third week when union was quite good. At the end of two months he was engaged in light work and flexion and extension were very good and steadily improving. A skiagraph three months later, September 19, showed good union and excellent position of the fragments.

Some recent writers maintain that the coaptation of the condyles can only be securely maintained by cutting down on the condyles and wiring or nailing the fragments, and that this is the best method of treatment, while most surgeons would treat them with bandages and splints in flexion, a few in extension.

There are some general considerations of special interest that might with propriety be mentioned in this connection as determining general conclusions:



Case 2.—M. M. Y., posterior view June 23, fourth day. Readjusted immediately after.

Anchylosis is due to misplaced fragments, and when in position should not be endangered by manipulation. Rubbing and gentle massage of the muscles may be used in a week. It is important in feeble subjects, but care should be exercised not to disturb the joint and fragments, as rest is the important principle in the treatment of any fracture and of the greatest value in acute joint troubles.

The real status of the *x*-ray is yet to be determined, though its use in surgery is one of the distinct scientific advances of our time. I fear we are prone to rely too exclusively on instruments of real or supposed demonstrable scientific precision which do not appeal to the exercise of our own analytic judgment and surgical acumen. There is danger that improvements in specialization may dull our sensibilities and, to an unfortunate extent, limit our accomplishments in methods of investi-

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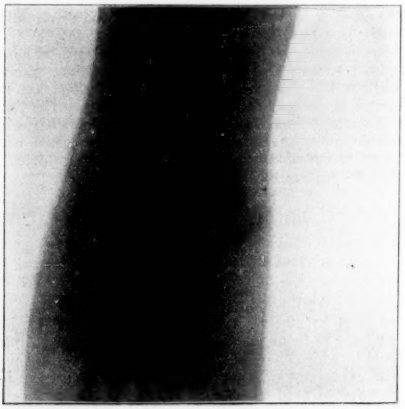
gation and diagnosis. In the location of foreign bodies its value is unquestioned. In the diagnosis of fractures its use is not so important nor its benefits so pronounced. In demonstrating the position of the fragments it is more useful, yet often inaccurate, and therefore unreliable, and dangerous to the surgeon because it exaggerates the malposition of the fragments, the deformity and the impairment of the limb. The functional results are much better than the skiagram would indicate as possible. This is well illustrated in the skiagram presented of an oblique fracture of the femur in a child 9 years old. The accident occurred April 21, 1900, by the child falling down a mine shaft. One month later she was placed in my charge, and at that time the skiagraph was taken. Repeated and careful measurements showed that the shortening did not exceed three-fourths of an inch, and this was partly due to the bend or distorted axis of the limb. I call attention to the apparent extreme overlapping of the fragments. The light shadow represents the temporary callus. The distinction is highly important. Imagine the influence of such a picture on a patient or a jury. As the father in this case

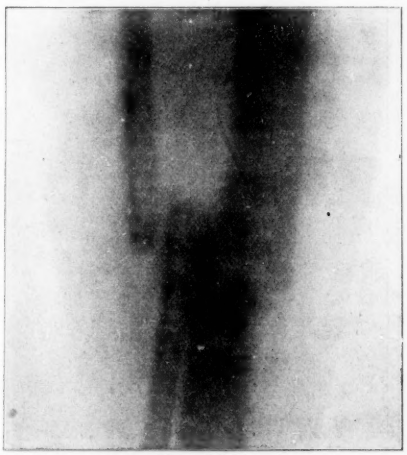


Case 2.—M. M. Y., September 19, three months after injury. Good union and position of fragment.

expressed it in a letter to me: "It was about as bad a jumbled up leg" as he ever saw. It might have been better, but the functional result is good. She was treated by an intelligent young surgeon who noted great difficulty in controlling the child's movements and the position of the limb, though it is quite natural and, to all external appearances, the result is excellent.

The other skiagraph, made by Stover, of Denver, one year ago, represents an oblique fracture of both the tibia and fibula about the middle. It is the case of a Boston woman who was treated by a Boston surgeon. It is a unique and extremely interesting specimen and appropriate to this discussion. It will be observed that while the tibial fragments are not perfectly adjusted, yet union is good; but the chief interest is in the fibula. The upper end of the lower fragment was undoubtedly driven against the tibia when the accident occurred, was never replaced, and is united to the tibial fragments, while the upper fragment is not in contact with any other, and therefore is ununited. The contour of the leg is perfect and the patient uses it even in dancing with comfort and pleasure. The position looks bad, but I believe it a safe assertion that the fragment could never have been replaced without cutting down on it and adjusting by the application of force.

Such a demonstration is significant. Mr. Lane,[1] of London, maintained, with much plausibility, that muscular action in displacing and preventing the satisfactory adjustment of fractures is greatly overestimated by surgeons: "That spasmodic muscular contraction exerts no appreciable influence on the fragments and may be left out of consideration in the treatment; that at best its opposition to replacement in the early period is only slight and transitory; that the obstacles to perfect adjustment are effusion of blood and inflammatory products about the fragments, and that we are unable to restore the bones to their normal form by means of manipulation and splints." While these remarks are specially applicable to Pott's fracture and to oblique fractures of the long bones, and, I may add, to the lower jaw, it will be a distinct advance when operation



Fracture of both bones of leg. Note symmetry of fleshy outline.

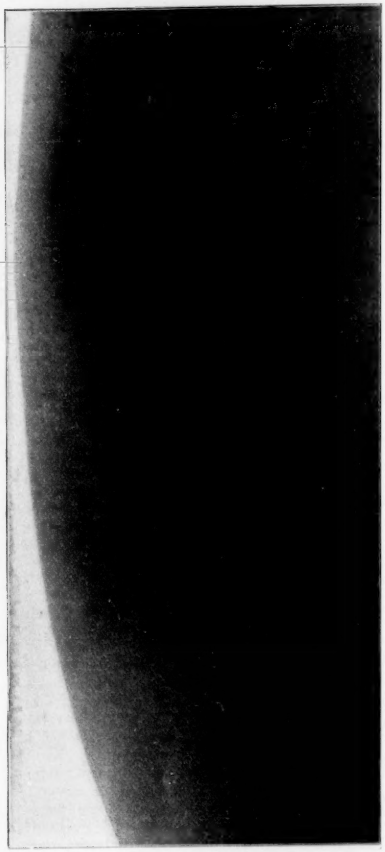
is resorted to when the fragments can not be satisfactorily adjusted and maintained by other means. In compound fractures there should be no ground for controversy. In others the question has only excited serious general consideration in reference to fracture of the patella, and the great majority of surgeons prefer nonoperative methods. But if worthy of serious notice concerning a fracture that frequently involves an important joint, what serious objection can be used to its application in fractures which never involve a joint, and where, should infection occur, it is not likely to prove so serious. Infection is the only danger, but with confidence in the established tenets of modern surgery in reference to bacteriology we do not hesitate to expose the abdominal and every other cavity with impunity, and why not broken bones.

With due allowance for its defects and dangers, the *x*-ray has made new conditions and imposed new demands and responsibilities on the surgeon. Do not the medicolegal aspects of the question, as well as practical results, indicate the necessity or desirability of more

1. Lane Lectures, 1897.

radical methods in the treatment of certain oblique and joint fractures? If both are put on a sounder and safer basis, this must be answered in the affirmative.

The only way to more certainly maintain the accurate coaptation of the fragments is to immobilize them by silver wire, screw, nail or clamp, but only under the most approved aseptic conditions. In the absence of infection the results must be better. This department of surgery has not been met with the courage and skill



Fracture of Thigh. Posterior View.

that has been so manifest in other fields, and it is too important not to receive the serious attention it deserves.

Carl Beck[2] says, in reference to skiagraphs, that there are injuries, the correct interpretation of which presupposes, besides thorough anatomic knowledge, the greatest care and a vast amount of experience as to the different modes of delineation in various projection planes.

2. Med. Record, N. Y., Aug. 25, 1900.

The greatest diagnostic difficulties are offered by the joints. With a distinct skiagraphic plate, taken under improved scientific conditions, it should, he avers, with expert clinical and anatomic knowledge, be evidence in court.

The *Annals of Surgery* for August contains an elaborate scientific paper by Cotton, of Boston, on the "Pathology of Fractures of Lower End of Radius." In reference to the Roentgen ray, he says: "It may be said in advance that there seems to be no single form of lesion described from any actual specimen which is susceptible of demonstration in the shadow picture that has not been demonstrated in one or more clinical cases; nor has the *x*-ray discovered any previously undescribed lesion. . . . It needs no argument to show that the *x*-ray plate, valuable as it is, is in many ways rather an imperfect record."

The American Surgical Association, at its last annual meeting, in May, by unanimous vote passed a resolution that the skiagraph is inadmissible as evidence in court, because, being a picture of a shadow and not of the object, it is inaccurate and unreliable.

The only tenable conclusion, it seems to me, is that the skiagraph should never be used as the determining factor in regard to the existence and pathology of fractures, but may be, in honest and capable surgical hands only, used to supplement or confirm opinions reached without it. It must always be a condition that the electrician is equally honest and competent. The illustrations and facts familiar to surgeons show beyond a doubt how unjust and indefensible a conclusion must be, in or out of court, that is based solely or chiefly on the appearances of the skiagraph.

GENERAL BODILY RESISTANCE AS A FACTOR IN NOSE AND THROAT DISEASE.*

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Good health is sometimes regained after the organism has been long below par, but in these cases there does not seem to be as much surplus to draw on as in those cases in which there is an exuberant vitality—in which, with a heritage of good health to start with, there has been a continued triumph of health and resistance over the encroachments of disease. It is this tendency of repeated small attacks of sickness acting as a drag upon the natural tendency of the body toward health that should be carefully watched by the physician. For example, a cold in the head is not generally considered a very dangerous thing, but frequently recurring colds in the head will lead to lack of resiliency in the parts affected that may gradually lead to chronicity.

The majority of the cases coming under the care of a throat specialist are chronic, and the treatment generally aims to remove the effects of some long-continued morbid action. It is a fact that most chronic affections of the upper respiratory tract are notoriously difficult to cure by medication, either local or general. The great advances in the specialty came when surgical means were perfected whereby good ventilation and drainage could be secured. These improved methods of treatment, which were forwarded greatly by the discovery of cocain, almost revolutionized the practice of the art, and now the percentage of cases that can be relieved is high. Still there are certain classes or stages of these

* Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

troubles which either are not amenable to surgical treatment or are liable to recurrence—and here is where our wisest forethought has its play.

Chronologically, at least, heredity has more influence upon bodily resistance than anything else. Evolution teaches us that physical types are transmitted. Sometimes particular family stocks seem to have greater immunity to certain diseases than others. In the case of infectious diseases this might be accounted for by saying that the soil had become exhausted and is not suitable for the growth of certain bacteria. It is like the well-observed fact that yeast will not propagate in well-fermented bread or wine. In ordinary cases it is reasonable to believe that if one's ancestors lived in such an environment as to induce good health in themselves, in all probability their descendants would inherit physiques which would make their bodies more likely to withstand morbific influences. On the other hand, "the sins of the fathers will be visited upon the children," and their omissions and commissions will be evidenced in their descendants by that which we call lessened resistance. Because your great grandfather was fond of a certain brand of wine is the cause of your tendency to sore throat. This is a rather devious course of reasoning, but thus Nature does her work.

We would all choose healthy ancestors if we could, but as that is impossible—except when selecting a family coat of arms—we can do the next best thing and select as suitable an environment as possible; and, after all, this is almost as important as a healthy ancestry. I am not prepared to question the fact that in many of the diseases of the upper respiratory tract the most brilliant results are brought to pass through means almost purely surgical; still, of the great mass of these diseases treated, attention to the patient's environment is the most vital point in giving genuine relief. By environment is meant the sum of the surroundings and conditions. Used in this sense it would include the patient's food, habits and hygiene—in fact everything, other than the patient himself, which has an influence upon the local condition. This would include all extraneous matters that tend to promote health. Used in this sense the environment is facile princeps, but it should not be forgotten that drugs used for their general and local action are nearly always necessary as adjuvants to other directions and advice.

There are good reasons why repeated acute attacks of coryza, and repeated engorgement of the local lymphatic glandular structures lead to hypertrophic conditions. There are good reasons also why these repetitions occur at short intervals in some individuals and at long intervals in others. Things do not come by chance, and in these patients who are such an easy prey to local disease there must be some type of constitution either hereditary or acquired, or both, to account for their susceptibility.

Because the lessened general resistance which causes this susceptibility acts so often through the nervous system, and because the nervous affections of the nose are intrinsically of such interest when studied from the standpoint of this paper, one or two of them will be used as illustrations. We will speak of the group of reflex nasal diseases in which the irritation seems to be centripetal, and of hyperesthetic rhinitis, in which the irritation manifests itself centrifugally.

In regard to the so-called reflexes which are caused by pressure points within the nose, it has always seemed to me that the general system was more at fault than the nose. The nervous system of the patient had lost its nice adjustment, so that irritation at the periphery is manifested in some other region as reflex disturbance. It is recognized that the cause in the nose is only slight, but it is just sufficient to disturb the balance in a nervous system which has all but lost its poise. It will most often be found that individuals suffering from these reflexes are manifestly of a neurotic type, and although the existing malady is relieved by removing the peripheral cause, it will be found that the nervous instability still exists, and likely will evidence itself in other directions. In this class of cases it is important not to saw off a spur in the nose and assume that the patient is thereby cured, but by reconstructive treatment build up and regenerate. If this spur was causing asthma, or hay-fever, or tic douloureux, there is further work for the physician, even though the symptoms are relieved—for the general resistance of the patient must be improved or he will have headaches from some eye-strain, will have prolonged brachycardia after he has the grip—or some other ailment of like nature.

There is another type of nasal disease, the hyperesthetic, in which it is necessary to increase the tone of the nervous system before much improvement begins. The cases are somewhat similar in their manifestations to hay-fever, but do not seem to be influenced by season. In my experience the disease occurs most often in anemic individuals who have confining occupations and are suffering from some constant worry. These cases, like their near relative, hay-fever, undoubtedly evidence some positive interference with metabolism. Uric acid seems to be retained in most of them, but whether this is a cause or an effect, the lithemia improves as the patient gets better. Tonics, sunlight, less introspection will cure some of these cases, which are very baffling when treated by local medical and surgical means only.

The physician who treats diseases of the nose and throat should not be so narrow as to treat the local trouble by local remedies only. Æsop tells a fable of the members trying to boycott the body, but to their surprise they found that they suffered to as great a degree. The withholding of nourishment from the body caused not only emaciation of the body, but also caused other parts to be equal sharers in the calamity. It is a rule that works both ways. If the body had attempted to boycott the members, it would have had meted out to itself the same degree of suffering. I have seen many cases of chronic pharyngitis much benefited by the patient abstaining from alcohol or tobacco, and excessive taking of sweets will often so disturb metabolism as to cause a pharyngitis and tumescence of the turbinated bodies. Change of habits in this regard has led to relief of the local trouble. These are very familiar causes of disturbance here, but frequently other causes may be found, the removal of which will lead to just as satisfactory a result.

I wish to make a plea for a practical application of these facts. Not only should the patient coming to us with these local troubles be given instructions in hygiene, etc., in order to more surely throw off the local ailment, but one should make it a constant study to notice and consider his patient's mode of life and environment, and strive to be ready with advice that will forestall trouble.

In order to intelligently give the patient other than local treatment the specialist should always remember that he is physician first and specialist afterward. He should inquire carefully into the patient's family and personal history, the course of the present disease; and, except in cases which he knows can be permanently cured surgically, he should bring to his aid all the

modern means of questioning the body. To do this methodically he should have minute notes of his cases. The card system is most convenient, and in private practice the financial account of the patient can be kept on the back of the case card appropriately ruled for that purpose. This will make it necessary to use and refer to the card at each visit and thus keep in touch with every phase of the local and general condition.

It sometimes requires close questioning of a patient to find just how he is transgressing the laws of health. The young lady eats "only a little candy now and then," but if you should happen to have her sweetheart as a patient during the same period, a little sympathetic questioning may bring out the fact that he is furnishing her 5-pound boxes of bonbons at more or less frequent intervals. Then your "moderate drinker" and your "moderate smoker" and your "slow and small eater" sometimes evidence an astonishing atrophy of their sense of perspective, and you may find upon going somewhat into statistical detail that they surely look at the things they consume and the faults which they have through the large end of a telescope. It is often a good deal of bother when we are busy to go into these minute and harassing details, but by so doing we put the practice of medicine and its legitimate branches upon a higher plane.

When the body at large requires treatment it is preferably administered by the laryngologist, especially when it can be done concurrently with the local treatment, but in some cases it is well to put the treatment into other hands. When so much depends upon relieving disturbances of metabolism and in keeping the whole body in a healthy condition, we surely are not doing the best for our patient if he is not given the benefit of modern appliances to secure these ends. While the specialist can not, and may not, limit himself to local work only, it is incumbent upon him to realize that some general treatments can be carried out better in other hands. He can not be expected to have the armamentaria needed for some cases; time does not permit him to become thoroughly conversant with all the kaleidoscopic changes in the whole field of medicine, and if he believes that some one else is better fitted to cure the general disturbance, the patient should be referred.

Prevention of chronicity, prevention of formation of hyperplasia, will save a train of complications which may mar the patient's future life. After many of the glands of the mucous membrane have been almost destroyed by chronic inflammation, after the function of an ear has been almost destroyed by chronic purulent otitis media, some relief can be given by modern treatment, but it is a make-shift after all. The glands can be stimulated to do twice the work they were intended to do and thus help out their shriveled companions, and the carious bone can be scooped out of the ear, but probably there was a time in the history of each of these cases when enlightened and conscientious oversight might have abolished the causes that led to these sequelæ. If we believe that heredity has something to do with these cases it is all the more important to prevent chronicity and recurrences; for then we are doing what we can to improve the type, and are building for the welfare of this patient's prospective descendents. Any good accomplished in any line of work is never in vain.

Ocular Disturbances from Thyroid Treatment.—The *Semaine Méd.* mentions that two Belgian physicians have recently reported a few cases of optic neuritis or asthenopia as the only indication of intolerance of thyroid treatment. The ocular troubles subsided on suspension of the treatment.

SYSTEMIC FACTORS IN CATARRHAL DEAFNESS.*

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SYRACUSE, N. Y.

Chronic nonsuppurative inflammation of the middle ear by its very location is a most difficult disease to treat; and when we add to this the fact that it is rare for any of these patients to come to us until the disease is of several years' standing, we do not wonder that a doubtful prognosis has been the rule in the past, but if we are to call ourselves specialists, is it to our credit that we should sit calmly down and accept defeat, with our present facilities for reaching the deeper parts of the head?

Without frequent exacerbations an inflamed mucous membrane, even in the most advanced chronic form, is not beyond relief and practical cure. The number of our cases of catarrhal deafness where more than this simple inflammation obtains and the deeper labyrinthine structures are involved, is very small indeed; so what is our proposition but a simple one if gauged by some of the complex and serious problems that confront men in other specialties?

If the middle-ear trouble be in the earlier stages, what will do it more good than free and normal ventilation? Close the vestibule of one nostril and see how soon you will have a congested state of the membranes; open the vestibule and see how soon normal ventilation will restore health to the parts.

If the middle-ear affection has gone further and the ossicular chain is hampered by products of inflammation, what will assist their absorption quicker than that the parts be again bathed with a normal supply of air? What will limber up its stiffened joints better than the mild stimulation and passive motion produced by the well-known application of camphor and iodin vapor[1] puffed into the tympanic cavity? Stimulative treatment of this kind, by reason of its effect on products of inflammation and ossicular mobility, acts with practical certainty in benefiting the hearing. All this can be attained and maintained if the little Eustachian tube, not more than two inches long, be kept normally patent. The degree of improvement will be according to the completeness with which we have removed prime and contributing factors; this is no mean task, but, as a rule, possible, if we grasp the situation and apply ourselves. Hence I can not feel that we are justified in discouraging that multitude of cases under 60 years of age who still retain the ability to understand clearly spoken words, and who are quite ready to have treatment when medical minds will agree on its utility.

Nonsuppurative inflammations of the middle ear, regardless of form, depend upon similar conditions for their origin; the principles of treatment involved in their relief are the same. However, necessity does not demand a dissertation on varied abnormal conditions within the tympanic cavity, neither will I assume to cover in this paper all the factors that may act as causative elements, but rather will devote myself to those most likely to impede recovery of the hearing power.

In looking over recent progress it must be admitted that what ability we now possess to successfully cope with catarrhal deafness is in a great measure due to the advance in rhinology, for this work as a preliminary step to future efforts appears peremptorily demanded. The improved state that has followed correction of

*Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

nasal abnormalities could not help but give happy results in the more simple cases, but it is likely that others have been balked as I have been by a goodly number who have failed to improve from those surgical methods as we hoped, and it is through a study of the causes of these failures that I chose the subject of this paper.

The nasal, postnasal and tubal membranes are capable of, and susceptible to, engorgements from various causes; hence if we are dealing with a disease so obstinate as chronic catarrhal deafness, each possible source of a recurrence of those engorgements must be eliminated, or they will prevent a good result following the best nasal surgery, and the most careful after-course of ear treatments.

Among these systemic factors upon which it seems particular stress should be laid, are: 1, a sluggish skin reaction; 2, low vital forces; 3, torpid liver; and 4, a lack of proper exercise.

I have mentioned sluggish skin reaction first because nothing is more common in creating pernicious head colds to which, as a rule, our cases are subject; and when we attempt to correct this tendency to head colds, at least two interesting problems are before us: The solution of the first calls for a more prompt skin reaction, and I know of nothing better for this than cold baths and friction. The plunge, shower, douche, or even putting on water from the ordinary bowl by the hands, acts with much facility and benefit. In patients of low vitality this application of cold water may not be followed by the warm glow that indicates a good reaction unless preceded by some light exercise, or brisk rubbing, but in any and all events some course must be persisted in to get and keep the surface circulation up to a normal standard, the acquirement of which, though slow but sure, is best shown by its degree of reaction to cold.

In my own practice I find that patients, as a rule, take warm baths, and these only for cleanliness' sake; in fact we seem to be living in an era of carelessness as regards personal hygiene. The busy American jumps out of bed in the morning, washes his face and hands, hustles into his clothes, rushes down to breakfast and away to business, works until Saturday night, takes his weekly clean up, and so on year in, year out, giving himself less care than he does his horse.

Another problem in the avoidance of frequent colds is protection from exposure; which as experience ripens appears of less and less importance. While in a weakened individual, this is for a time unequivocally necessary and is always a point to be observed, still I believe with A. Chelmoski[3] that "the proper method of protecting against cold is not to wear an excessive amount of clothing, but to stimulate the skin to rapid reaction." This is a rational idea and appeals to us when we consider the importance of its glandular and circulatory functions. The only thing necessary is that we give this matter the thought and attention that we do other vital subjects. The skin reaction should be so prompt that it will be a shield rather than a menace to health.

The next systemic factor that our failures have shown to be a great hindrance, if we let it pass unnoticed, is a lowered vitality. Without a good general tone, the system is slow to throw off any disease, and particularly one so deep-seated as chronic catarrhal deafness.

A torpid liver or a lack of exercise, with attending digestive disorders, may also create and make obstinate an inflammation in the Eustachian tube, effectually blocking anything like a regular course of vapors to the middle ear; even gastric, uterine and renal troubles have their bad influence on the thickness of the membranes, but with many other constitutional causes, these latter require attention better, and beyond that which the aurist is expected or justified in giving. In other words, catarrhal deafness is often dependent upon so many possible causes or combinations of causes, that it calls into play not only the qualification of a nose, throat and ear specialist, but makes it necessary that he should have had the training of a general practitioner.

In cases of chronic type, correction of nasal and postnasal morbid states is but a small preliminary step. If patients be of low vitality, anemic and very sensitive, they must be built up. If they be full-blooded, their diet must be restricted, their exercise increased, and their hepatic function kept regulated until such sources of recurring attacks of tubal inflammation are obliterated. Of what use is it to treat inflammations that recur without we first remove their sources? We may benefit them for a few hours, but we lose the confidence of our patient, because we fail to get results on chronic states; he stops treatment and our efforts are discredited.

A limited number of persons become afflicted with deafness in early life, because of disease or environment, who at the time of our examinations are in good general health, with nothing in the way to prevent ear treatment except perhaps a tubal inflammation induced by some intranasal pressure. These patients are just so much nearer the period in which vapors can be satisfactorily applied to the middle ear.

A knowledge of hygienic care and how to increase bodily resistance to disease is a distinct obligation upon the otological specialist, but I hope I will not be construed as meaning that we should take it upon ourselves to correct complicated systemic disorders, though we should be able to relieve a congested liver, direct in matters of personal hygiene and insist upon their observance. The physician's duty is to correct causes and apply treatment—the patient's, to follow directions.

As mentioned earlier in this paper, catarrhal deafness is worthy our best efforts. As a disease *per se*, within reasonable limits it is comparatively a simple proposition if we eliminate all causes of recurring inflammations of the Eustachian tube. To be more explicit, I feel that its greatest problem is the removal of these causes; after-treatment consists simply in maintaining the improved condition and applying, daily if indicated, mild intratympanic ventilation, stimulation and massage. Persistent effort can be looked upon with favor; even the quite advanced sclerotic forms are not so formidable if pernicious influences are out of the way. Nature then takes hold with a ready hand and gives us, if not a cure, marked improvement.

Personal experience has taught that failure to improve the hearing power means either a fault in the patient or in the physician, not in the local ear condition.

There must still remain some uncorrected extraneous cause that is keeping the Eustachian tube swollen. It is not the duration of the disease nor the degree of deafness that should govern our prognosis, but rather a good physical condition and the financial ability to have skilled attention.

The surgical aspect of cases as a preliminary step is important, but no more so than a functional equilibrium, for there is usually a stage following operative work in which but little if any effective treatment can be carried through to the middle ear, because of some attending systemic disorder, and those systemic disorders are determining factors in the majority of chronic cases.

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DISCUSSION ON PAPERS OF DRS. STILLMAN AND SNOW.

DR. C. M. COBB, Lynn, Mass.—I would like to know whether Dr. Snow includes in his statement that these cases should be benefited in the presence of an adhesive catarrh?

DR. HALSTED, Brooklyn, N. Y.—I thoroughly agree with the Doctor in drawing attention to the systemic factors. Most of us spend too little time in the consideration of these facts. By paying attention to the systemic factors, we are often able to obtain results that otherwise would be impossible. But I disagree with the Doctor as to the frequent use of vapors and drug treatment of the middle ear, as he advocates. It has been my misfortune to see many cases become worse after a temporary improvement, simply because of too much local treatment. There comes a point when we can advance no further by local treatment in these cases. Because the patient is able to respond progressively better to a certain few frequently repeated tests is not necessarily evidence that the case is improving. A set of tests may give us a false impression of the progress of the case. If we use the various vowels, for instance, we find a certain improvement, but beyond this we can not go by the treatment with catheterization and the use of vapors. Often the catheterization and the vapors do harm. The catheterization may set up and keep up an inflammation in the Eustachian-tube, if used every day as the Doctor recommends, that simply makes the condition worse. I am not an advocate of the use of Politzer's douche alone.

DR. J. O. ROE, Rochester, N. Y.—I am in thorough accord with the sentiments expressed by Dr. Snow. A great many cases of local engorgements about the upper air-passages are due to general systemic disturbances. In fact, the great majority of colds, to which people are so frequently subject, are due more to internal derangement than to external atmospheric influences. In the great majority of cases in persons who have taken a severe cold, in the head, for instance, by examining into the condition of the system we will find that it is induced or very much aggravated by a general sluggish or depressed condition of the system. During the past winter I myself had two severe colds in the head, starting in the nose. In both cases I could trace it directly to general disturbance, overwork and lack of exercise, and the condition we commonly term biliousness, which is often the foundation of colds. The colds in the head—which so often cause ear complication—are therefore due to two conditions; first, to ptomain poisoning, the poisoning of the blood from improper elimination of the skin, bowels, liver, etc., and second, to reflex disturbance, from the abdominal organs to the nose.

In regard to the treatment of the chronic ear affections, it is necessary, in the first place, to put the nasal passages in order. If we have an obstructed nose, a badly diseased condition of the nasal cavity, it is much more important to put the nose in order than to begin treatment of the ear, because if you could do but one you would benefit the patient more by putting the nose in order than by treating the ear for an indefinite length of time. After first paying attention to the nose, then, by proper treatment of the ear, we will often obtain most excellent results, in cases of chronic catarrhal deafness, that are considered incurable. There is a point in regard to the Eustachian catheter, to which reference has been made: The use of the catheter is exceedingly important for two reasons: 1, in medicating the ear through the catheter, and 2, in the mechanical effect of the catheter in overcoming a stenosis of the Eustachian-tube, which has resulted from interstitial thickening of the tissues around the tube, particularly at its lower end.

QUESTION—I would like to ask Dr. Roe how he overcomes obstruction high in the tube?

DR. ROE—In the majority of cases you can pass the catheter up through the membranous portion of the tube for quite a distance, and by having a proper catheter you can accomplish much in many cases. In some of these cases the use of galvanism produces most excellent results.

DR. G. L. RICHARDS, Fall River, Mass.—I can appreciate what has been said about elimination, as I have long been contending that the bowels should move at least three times a day, inasmuch as we eat three times a day. It has been observed, among animals, that they ordinarily empty the bowels much more often than we do. The removal of waste products of digestion has been so much influenced by the matter of convenience that we have lost sight of the normal physiology of defecation in its relation to the ingestion of food. The question of ptomains as produced in our own bodies, from faulty elimination of waste products of digestion, has not received sufficient attention at our hands.

DR. E. PYNCHON, Chicago—Both papers are very commendable, inasmuch as they are conservative and call attention to systemic treatment, which is too often neglected. As regards the systemic factor in catarrhal deafness, one of the features to bear in mind is the disadvantage all of us derive from our modern system of living in overheated buildings that are too often poorly ventilated. We go in and out of these houses, stores, hotels, etc., several times a day, without any hesitation at the doorway, and without removing our overwraps. My own custom, during real cold weather, is, if possible, always to remove my overcoat when going in a warm place, and to stop for a time in the passage-way when coming out. Instead of wearing a heavy undershirt during very cold weather, I advise putting on two light-weight undervests, which give the warmth that is desired and do not overheat the body. Attention should be paid to the matter of food and exercise. There is no doubt that we eat too much, and that insufficient attention is paid to diet and excretion. One thing I would urge is the value of regular and frequent drinking of water. The same conditions which the Doctor has referred to as tending to produce catarrhal deafness also assist in the production of the so-called rheumatic diathesis. As regards treatment, while the Doctor has touched very little upon it, I can not refrain from calling attention to a new method of treatment recently introduced by Dr. Weaver, of Chicago, to which he has given the name "intratympanic massage." In the treatment recommended by Politzer there is massage at each inflation, but the inflations are not often enough repeated. The device recommended by Dr. Weaver consists of a small wind-mill, if you please, which is caused to revolve by a shunt of the air current while the bulk of the air passes through a hole in the shaft of the wind-mill, and is thus rapidly interrupted. I have been using this device with a Buttles' inhaler, while inflating by Politzer's method. Of course it will be understood that compressed air of proper pressure must be employed.

DR. C. M. COBB, Lynn, Mass.—We are a little inclined to the use of loose terms. Oliver Wendell Holmes said in one of his papers that our forefathers were very wealthy in expressions. He declared that he knew of nothing that sounds so well and means so little and is so satisfying to the patient "as congestion of the portal circulation." We have passed beyond that stage, and now we have lithemia and uric acid, which are terms referring to probably the same condition. The subject of an acute cold is interesting. The systemic condition has probably something to do with it, and the cold probably has something to do also with the systemic condition. When a man contracts a cold, whether he has lithemia or a local abstraction of heat from some part of his body, in a very large percentage of cases the cold will be found to commence in one of the chambers of the nose and pass then to another. Can anyone tell how any systemic condition or abstraction of heat from the body may cause the symptoms we call a cold? A man gets a cold in his head, and not much anywhere else in comparison with the amount in his head. These cases of catarrhal deafness are all prone to have colds, and this is largely due to nasal empyema. These patients are prone to have colds from over-indulgence and exposure, and the colds they get do not run the course of an ordinary coryza. Those cases deserve

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a great deal more attention; they should be sorted out and sifted out from other cases. When you eliminate all the cases that can be classed as influenza, or that depend upon an exanthem or pneumonia, the remainder of cases of acute rhinitis are probably of infectious origin. All those things have a direct influence on the ear. If that part of the naso-pharynx to which the Eustachian-tube leads is involved, and the lumen of the tube is partially or entirely closed the ears suffer, or the secretion from the nose or naso-pharynx may be carried to the middle ear by forcible blowing, or the ears may be infected by the extension of the inflammation by continuity of tissue. These patients would probably get well if it were not for more or less constant reinfection.

DR. F. J. QUINLAN, New York City—The question of prophylaxis of disease is one we should always consider. Many colds depend upon bodily fatigue and faulty assimilation. A man is exposed to some influence of cold and receives the germs of disease. The phagocytic action of the leucocytes is insufficient and the germs enter into the system rapidly. There is lymphatic stasis and there is no better or more accessible vestibule for the invasion of germs than the nose, which is constantly connected with the outside atmosphere. Therefore, if a man's system is lowered, the turbinates at once become congested and unable to empty themselves. The question of prophylaxis is largely in the individual. A celebrated pediatrician a few years ago tried to eliminate postnasal growths by dropping salt water through the nares, and someone told him that he would do much more good if he gave the child full length baths of salt water. Often the system is loaded down with non-assimilated products. The subjects of the papers are not properly emphasized. Water applied to the skin causes the greatest tonic effect in its vivifying influence. The rich can use it, but the poor are deprived of its use and hence we see the greatest number of these cases among the poor. We should let the people know of the good effects of water used both inside and out. The Doctor has spoken of clothing, but I think the question of beef is most important. These colds and conditions of congestion weaken the individual and start a train of ills that involves the nose and throat and every part of the mucous membrane.

DR. S. F. SNOW, Syracuse, N. Y.—I will answer Dr. Cobb's question as to whether I include the cases with fixation of the stapes. I do not. But how many do we have come to us that are or really get in that condition later on? Cases of fixation of the stapes do occur, but I doubt whether they occur often enough to warrant us in giving an unfavorable prognosis by the wholesale. One of the gentlemen has disagreed with me as to the advisability of such frequent local treatments. I wish to place myself before this Section, and the world if necessary, as willing to stand by the position I have taken. There are cases in which daily application might be harmful, for they are not yet in that improved physical state where local ear treatments can be effectively employed. But if we get other things out of the way, and secure a functional equilibrium so that the skin reaction is good, the liver normal, and if they are careful of their habits, we will find a time when they will tolerate the vapors and improve very markedly under their use. The more chronic the case the more often we have to treat them. I do not advocate treating these cases daily year after year, but very often I do for three consecutive months, the treatment to be repeated when unfavorable symptoms appear. As regards tests, my patients are rarely tested, except at the end of a course of treatments. I assure them first that we must clear out the nasal passage, and I accomplish that whether it takes one month or two or three. I do not encourage them to have the vapor used until they have had bad constitutional states corrected. I will not let them have treatment until they are ready for it. When the constitution is fit and they are willing to follow my directions, I am ready to treat them, and successfully. I am glad the paper has been so thoroughly discussed, and I can not convey the depth of my feeling regarding the importance of these cases. We must, as aurists, do something for them.

DIAGNOSIS AND PROGNOSIS OF EAR DISEASE.*

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PHILADELPHIA.

It is probable that most medical men, if asked as to the instrumental aids to the diagnosis of ear diseases, would think first and perhaps only of a speculum. Too many would try to excuse their failure to study a case by their lack of such an instrument; and yet many would undertake its treatment upon some fancied basis without knowing anything as to what was really before them or having the means and skill to treat it if they knew. The foundation of such foolhardiness is a total ignorance of the methods of aural diagnosis and skepticism as to the ability of any one to do more than guess in the matter. Yet it is axiomatic that diagnosis is essential to prognosis and both of these are requisites for any rational treatment. Even among men practiced in otological matters there is a woful failure to understand and employ diagnostic measures, with many consequent mistakes and much futile if not harmful work. Hence the need of discussing so trite and elementary a phase of our specialty as that which I have chosen.

To the patient, if not to the surgeon, prognosis is of vital importance. Upon the etiology and pathology of the various affections must depend the questions as to the urgency and the promise of treatment; and of these we can speak only from the standpoint of correct recognition of the nature, phase and complications presented in the case before us. So the life-history of disease, general and special, must be known to the specialist, as well as the details of the clinical picture met, and he must figuratively see through the ear if he is to make a good application of his special knowledge and skill.

Almost every diagnosis is based, here as elsewhere, upon the anatomy and physiology of the parts. Leaving aside the former subject, I will ask you to consider here only some of the physiological aspects which we ought to study as to the normal and diseased ear. We may premise that for the external ear sight and touch are principally available; for the middle ear with its air cavities, pneumatic measures; and for the internal ear, acoustic means.

It seems superfluous to insist upon the importance of unaided as well as aided sight and touch in our study, yet the numberless instances where their use has been neglected and gross blunders of diagnosis made because the practitioner refused to use his senses and yet undertook treatment on the strength of his imagination, compels reiteration of this trite matter. Many cases can be studied by the natural light falling past the examiner's head into the straightened ear-canal, to the recognition of furuncles, foreign bodies or the presence of a normal drumhead. Remember that Wilde did most of his work with nothing but a speculum, and often did not need that; yet many a modern aurist with a full armamentarium could learn much from Wilde's writings. Specula can be improvised of letter-paper or other material; any piece of mirror can be brought into use, especially with sunlight or other strong illumination, and a hair-pin or other bit of wire can be made into an admirable probe; but it is the eye and hand behind these or other instrumental aids which are the real means of diagnosis, and "special" training is by no means essential if a true physician, with gentle hand

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and observing eye, undertakes these studies. Even in palpation there are many ways of failing to learn. A swollen mastoid may seem tender and fluctuating to a careless hand, and a trephining be advised when carefully placed index fingers would prove the swelling a mere edema and the pain not due to deep bone-lesion, but to the motion imparted to an inflamed canal. One may recognize blindfolded the indurated rigidity of an eczematous canal in which a keen eye may discern no surface signs of the affection, and by proper prognosis avoid imminent distress for the patient and humiliation of himself. Touch must aid sight in many tympanic conditions before we can know what are the real features of the picture presented, by sweeping away the seeming landmarks and proving them to be but pus, epithelium or other foreign matters lying in front of the real structures.

Yet even when the diagnosis thus made is clear and positive it may be only superficial and partial. The manifest lesion may conceal something beneath which is far more important. A trivial furuncle of the canal may mask a serious tympanic inflammation and we must often remain in doubt as to the conditions beyond. Here the pneumatic methods of tympanic study may aid us greatly, but still oftener the acoustic measures which investigate the percipient apparatus and its adnexa.

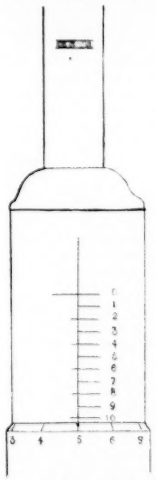
Of inflation measures and pneumatic massage much might here be said, for more can be done with these and more mistakes avoided than is at all sufficiently realized. I feel need of calling attention to Löwenberg's simple test of inflating chloroform vapor, which by feeling cold to a sclerotic ear, instead of hot as to all others, may give us early a very important prognostic sign. Yet the acoustic tests are still less fairly understood and practiced, and it is upon these I would prefer to lay my main stress.

Almost every expert is on record as to the small value of the watch as a test, and Politzer's acoumeter, although well conceived, has not much better met the requirements. Still less have some of the haphazard substitutes which have been put forward for railway and school tests any claim to be accepted as having standard or comparable value.

The voice-tests in faint and loud whisper, spoken with the "reserve air" which can be forced out after ordinary tidal respiration and calling for repetition by the patient of the well-chosen test-words, are far more precise as well as practical. But all these are quantitative rather than qualitative measurements of loss, not helps to recovery. We must have a "tone series," in form permitting comparison of conduction by bone and by air, before we can learn some of the most elementary and fundamental data.

It may be too much to expect that the general practitioner should in preparation for his few ear-cases equip himself with a series of tuning-forks, and even the specialist must draw the line at some of the numberless implements urged by enthusiast or instrument-maker upon his attention, yet lack of a well-selected complement must seriously impede if it does not vitiate his diagnostic work.

When we hear a man say that he puts little confidence in the results of the tuning-fork, we may be fairly sure that he has but a single fork and makes poor use of that. One fork is competent to give us but a part of the information needed in many cases, although it can be very valuable within its field, and I would place a fork of some 200 double vibrations per second as the first choice in the series (A-213). It should be of a good size, so as to have 80 to 100 seconds' duration of sounding after a moderate blow, such as that of falling its own height upon the knee or a rubber block, but some of those offered are far too heavy and, with their clamps, needlessly expensive. Some means of suppressing the over-tones is requisite, but a bit of rubber-tubing drawn over the ends is at times better than the clamps. A fork of some 500 vibrations (c-512) is more generally recommended and can be purchased for 25 cents, in small size, at most music stores. Another of two or three octaves higher pitch, 2-4000, has occasional usefulness, but one two octaves lower than our first choice is much more valuable (A-53). The octave below this is of doubtful audibility, while this tone ought to be heard by any normal ear, and it is so early lost in cases of obstructive lesion that it forms almost a premonitory indication of commencing catarrhal deafness. The higher tones already mentioned better serve to test the percipient apparatus, but are surpassed in this by the



THE GALTON WHISTLE.

APPROXIMATE PITCH IN DOUBLE VIBRATIONS PER SECOND.

5=52,000
10=40,000
12=35,000
18=30,000
21=25,000
24=20,000
28=15,000
35=12,000
48=10,000
60= 7,000
70= 6,000
84= 5,000
105= 4,000

Galton whistle or the König rods with their far higher range. A cheap and handy substitute, of real though of limited value, is furnished by the little bent-wire "serpentine screwdriver" sold in most of the bicycle stores, all of those tested having had tone of fair purity of about 35,000 double vibrations per second.

The Galton whistle, however, is of wider value as originally made, and may be more precise yet in König's and Edelmann's improved forms. I must warn, however, against most of those offered for sale, since they are generally travesties upon Galton's instrument, and of no more value than a boy's willow whistle. Even some coming from Meyer & Meltzer, in London, have not conformed to the original apparatus, and I know of but one maker in Philadelphia and perhaps one in Boston from whom standard whistles have been obtained. The square-cut opening, the proper caliber of the tube, correct pitch of the screw, and accurate zero-point are one or all absent in many of the alleged Galton whistles offered; yet all of these characteristics must be demanded if any standard is to be maintained. Some of the published results from tests are to me inexplicable, if genu-

ine Galton whistles were employed, so utterly discrepant are they with my findings. A tube length of 10 mm. ought to give a note of about 21,000 double vibrations per second, and one of 1 mm., corresponding to one full turn of my instrument, a tone of 42,000. A higher note than this is audible to most of my patients as well as to myself, and I would set the normal limit for young ears above 50,000, as I have no difficulty in hearing Appun's 49,000 fork or the Galton whistle at less than one turn.

Qualitatively, then, we ought to determine for all our cases whether they hear tones as low as 50 and as high as 40,000, and between these moderate limits make fuller test with two or more forks, while in those giving evidence of nerve lesion a wide range should be tested by the whole scale of the Galton (4000 to 40,000) and a number of lower tones.

In addition to these studies of the hearing by air-conduction, we need direct and comparative tests of the bone-conduction, remembering that there is a senile loss of the conducting power of the cranial bones aside wholly from faulty perceptions, and that the palpable vibrations which are as notable on the patella as on the mastoid, must not be confounded with the audible. Weber's test of the lateralization of the vibration to one ear from the middle line of the head had better be preceded by Rinne's test, since it is hard for many patients to believe their own senses when the tone seems louder in the worse ear, which they have perhaps long regarded as totally deaf. While the Schwabach method of timing the duration of the tone by air and by bone is eminently valuable, the simplification made by Roosa and Emerson is even more practical, consuming less time and securing better responses from most patients. If the fork, not too strongly vibrating, is held close before the ear and then its handle rested upon the mastoid, with the question, "Is it better front or back—back or front?" suiting the action to the word, few have difficulty in answering correctly; and as the loudness and the duration are comparable, we learn whether the normal preponderance of air-conduction exists or not, and can easily move the fork to our own ears for quantitative comparison. As the ordinary A fork (213) should be heard on moderate stroke only about 45 seconds by bone, as against 100 by air, the preponderance, as often found in tympanic cases, marks a decided impediment to the due penetration of the aural sound-waves through the affected conducting apparatus. It is easily demonstrated that this same obstacle shuts in, so that the fork vibrating upon the head is heard louder and longer than normal—perhaps for 50 or 55 seconds. This is best shown by the simple test of Gardiner Brown, which consists in holding the handle of the slightly vibrating fork upon the bridge of the nose and noting how much greater or less time the patient can hear it than the examiner's fingers can feel the vibrations. Cessation should seem simultaneous to each, and in spite of personal equations one second of discrepancy can generally be noted by this means, and secondary involvement of the percipient apparatus thus detected. The Weber test then used, by resting the vibrating tuning-fork, not on one, but a series of points in the middle line of the head, will generally obtain a correct answer and be lateralized to the worse ear in obstructive, to the better ear in perceptive, lesions. Results which are doubtful with a fork of 200 or of 500 vibrations per second, will often be unmistakable if those of higher or lower tones are employed, and due care be exercised to set aside any preconceptions of the patient and to elicit answers not as to what they *think* but as to what they *hear*.

Far too little employed is the valuable test of Politzer as to the permeability of the Eustachian tubes in the act of swallowing, for the tuning-fork vibrating before the nostrils should be heard much louder at the moment that the tube opens in deglutition. This tells of its physiological action as contrasted with its more passive distensibility on inflation, gives clear contrast as to the two ears and often tells more as to the stage and prognosis than any other test at our command. Bing's test also proves at times valuable, in that the tuning-fork vibrating on the mastoid can be made again audible after it had ceased to be heard, by stopping the canal with a finger; and as this secondary perception should have a measurable length in cases of nerve-lesion we may recognize the coexistence of slight conduction impediment by its subnormal duration.

While the complaint of the patient and some of the details of his history should always form a part of our record, more valuable facts of the history will often be gained by our objective study and due correction made in his statements.

The objective findings should then be noted as to hearing for conversational or whispered speech; for the 50, the 200, the 500 and the 2000 v. s. tuning-forks and the Galton whistle by air, and for the 200 fork by bone-conduction from the mastoid and from the nose; for the Politzer's test of Eustachian patulency and for the lateralization from the middle line. Add the findings of the otoscopic examination, of anterior and posterior rhinoscopy and the response to inflation and pneumatic massage. These, added to the name, age and occupation, form a record concise, quickly obtained and pregnant with meaning for correct diagnosis and prognosis.

DISCUSSION.

DR. J. HOLINGER, Chicago—The Doctor showed us his series of tuning screw-drivers. They are undoubtedly irregular in their intervals and the time they keep on ringing is too short. To overcome these two cardinal points was the effort of Bezold and Edelmann for over ten years. Why did he not use those beautiful sets of tuning-forks of Bezold-Edelmann? They contain from sixteen vibrations up to the highest, without interruption. The number of vibrations is given on each tuning-fork. They are mathematically correct. It would be impossible to compare the Doctor's records of cases with the sounding screw-drivers with the records obtained by anyone else. Then as to the square opening in the Galton whistle, it has long been proven irrational and the oval opening has been found much more sharp in its results. Edelmann had to provide for an opening that could be made smaller or larger. If the opening is unchangeable the oval opening is preferable, and its results are not worse, as I can prove with Koenig-Schwendt's dust-figures.

DR. EDWIN PYNCHON, Chicago—The paper has been very instructive. Two months ago I heard a similar one read before the Western Otolaryngologic Society, at St. Louis, and I then called attention to a little procedure which has been of assistance to me when the patient is in doubt about the Weber test. Supposing the left ear is affected and the patient claims to hear the test best with the right ear. I then stop up first the right ear and then the left, repeating the test. Afterwards, without stopping either ear, I again place the tuning-fork upon the top of the head, when the patient correctly tells in which ear the test is best heard.

DR. E. AMBERG, Detroit, Mich.—We know that Politzer's instruments are in general use, but I have heard on good authority that they do not compare accurately one with another. I thought I could overcome this difficulty by having an apparatus constructed on a different principle. There came to my mind the apparatus which is used for the measurement of the depth of sleep in the psychophysical laboratory. I had such an apparatus constructed in Berlin, and I think that these instruments may compare more favorably one with another. However, I do not know whether those fine points are of such

great value in our daily work. At any rate, we should make it a matter of principle to try to be as exact and correct as we can. Therefore, I would take exception, at least for the use of the specialist, to this little instrument which is intended to replace a tuning-fork, shown to-day. Professor Loeb, in a conversation, if my memory serves me right, told me that experiments had been carried out under his direction, years ago, with the aid of an instrument similar to the one I have mentioned. If I am not mistaken, the experiments to which Professor Loeb referred were intended to establish facts as to the acuteness of hearing under various conditions. It is important, I think, to consider conditions under which hearing tests are made. I remember that one time when I had overworked myself I thought I heard the clock at 11 p.m. strike twenty-seven times. It was, if I remember correctly, after I was fatigued through study. The time of the day and the other conditions of the patient, I think, should be taken into consideration when a hearing test is made.

DR. B. A. RANDALL, Philadelphia—I have the Edelmann tuning-forks and they are very nice, very useful and pretty, and as specious as any that are made, for, like the Politzer acoumeter, they are apt to differ in tone and loudness and other essentials, so that in a dozen you could hardly find two that do not differ. I have not tried to split hairs, but only to get at the diagnostic points that are of value in treatment. So I have not tried to lay down just what should be the precise limits as to time and distance that the fork should be heard. As to the Galton whistle, I have brought that forward because the prime essential lies in the fact that we are dealing with a closed pipe and must have a definite length and that length can not be defined if the opening is not rectilinear. Edelmann's new whistle may be as specious in many respects as the set of rods I have, which he said he had made for Koenig's rods; but they were inaccurate, arbitrarily numbered and what they stood for he could not tell. I have much respect for the good work done on the other side of the water, but the very bad work I have seen emanating from Edelmann and other men has made me favor the work done on this side of the Atlantic.

EFFECT OF ALCOHOL ON THE NERVOUS SYSTEM, THE MIND AND HEREDITY.*

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Alcohol has a twofold effect on the nervous system, a direct or primary, and an indirect or secondary. Either of these may act physiologically, i. e., functionally, or pathologically, i. e., structurally. Either may and does unfold its force upon every part of the nervous system, brain, cord, and peripheral nerves; in fact on every organ and tissue of the body, notably upon the blood-vessels, particularly of the brain, the kidneys and the liver. The subject is too large to render justice to it within the limits of a paper like this, and I shall, therefore, be forced to confine my remarks to a narrow domain.

Upon the nerve tissues alcohol has an acute influence. This can best be studied by experiments on animals, and by the effects shown in fatal poisoning with large amounts of alcohol in persons unused to its influence. Of the ordinary state of acute intoxication, I need not speak. That picture is familiar to all of us.

In a very able paper, Dehio,[1] some years ago, demonstrated changes in the ganglion cells of the cerebellum produced by acute alcohol poisoning. A year later, Stewart[2] confirmed and extended the observations of Dehio, which consisted in the diminution of the chromophile granules of the nerve cells of the cerebral cortex, the Purkinje cells of the cerebellum, and the large multipolar cells of the spinal gray matter. The importance of these changes is vastly increased in the light of the theory that the ganglionic cells possess certain powers of mobility of an ameboid nature, which permits them to extend and to retract their cell-prolongation to a slight degree, producing normally a contiguity of structure *without* continuity. I believe in this theory, for it is the only one which explains to me the phenomena of life, both in rest and in activity. Into that, however, I can not enter further at present.

I have in mind a unique, unpublished case which may bear a close relation to the observations of Dehio and Stewart. It is that of a young man who, about one year ago, was referred to me. The patient presented a most curious complex of symptoms, which I have nowhere found described, and which I herewith take the opportunity to record.

F. W., white, a farmer, aged 19 years, had up to about seven months previous to my seeing him been quite well, and constantly engaged at work on his father's farm. During a period of perhaps a year before any symptoms had become manifest he had been drinking somewhat, but had never indulged to intoxication. Gradually a general lack of nutrition set in, he began to lose weight and strength, and almost imperceptibly, at first, peculiar spasmodic seizures supervened. These attacks were wholly motor in character, occurring, as the malady developed, more and more frequently until, when he came to my sanatorium, they were almost constant, recurring at the actual rate of about once every two minutes, day and night. During the entire period of the affection the appetite was excellent, no symptoms were shown by any of the internal organs, no sensory changes were manifest, nor were the secretions altered, save that the urine was somewhat scant and perspiration slight. In fact, all symptoms related to the motor nerve sphere, though at no time was there the slightest degree of paralysis noted. The seizures were characterized as follows:

Every few moments the muscles became tense and rigid, apparently all over the body—trunk and limbs—face neck, eyes, tongue, larynx, esophagus, etc. During the attack he could usually make voluntary movements, but he could walk, talk, breathe and swallow with difficulty. The facial muscles and masticatory muscles became "set" and the neck stiff. There never was any inclination to opisthotonus, nor the slightest loss of consciousness. No vasomotor signs were present, the cutaneous and pupillary reflexes were normal, but the deep tendon reflexes were somewhat increased. He suffered no pain whatever, but some muscular soreness existed, doubtless due to the muscular contractions.

At the first examination, I declined to give a positive opinion of his case, but expressed the conviction that the malady would not remain stationary, that it would either prove rapidly fatal, or he would recover under proper treatment within a few weeks, advising careful observation and treatment at the sanatorium. At that time I felt sure I could bar out an hysterical affection of which no symptom was shown. My advice was followed, and the patient remained under my immediate care for nine weeks. During this period he steadily improved under static electricity, massage and the use of tincture of gelsemium, ten drops thrice daily, until complete recovery occurred. The seizures gradually decreased in frequency and intensity until they ceased altogether. I would perhaps not have mentioned this

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1. Heinrich Dehio: Experimentelle Untersuchungen über die Veränderungen der Ganglienzellen bei der acuten Alkoholvergiftung; Centralbl. f. Nervenheilkunde und Psychiatrie, 1895, N. F. 6 113.

2. Colin C. Stewart: Influence of Acute Alcohol Poisoning on Nerve Cells; Jour. of Experimental Medicine, vol. i, 1896, p. 623.

case in this connection except for two facts. 1. The only etiologic factor to be elicited was that he had used alcoholic drinks before the affection obtained. 2. On three separate occasions, when he had almost recovered, friends came to visit him and he indulged in a glass of wine with the result that, each time, the attacks recurred with their former force and frequency, proving to me conclusively that there existed the most direct relation between the seizures and the use of alcohol which produced this peculiar multiple paramyotonic condition. I have never heard of a similar case.

Undoubtedly, many other examples of the toxic character of alcohol and its influence on the nervous system could be cited. I need merely make mention of the analogous states known as delirium tremens, due to the excessive use of spirits containing large amounts of fusel oil; of the ordinary phenomena of acute intoxications in which the loss of inhibitory power in all spheres is of such common occurrence that it is usual to accept the opinion of the stimulating effect of alcohol on mental activity. This opinion I regard as decidedly erroneous. There is a vast difference between increased functional brain power and diminished inhibitory power, but momentarily the apparent effect may be similar.

When we come to speak of the more chronic condition called "alcoholism" we meet with a very different entity. Here can best be seen the effect of the poison on the nervous system, owing to the fact that widespread changes have taken place in the central nervous organs.

Of these changes those of the vascular system of the brain are by far the most common. It would appear, therefore, that the effect on the nerve tissue itself is purely secondary, due, in other words, largely to malnutrition of the nerve elements. The alterations in the structure of the artery walls are widespread and frequently reach a high degree, even to obliteration of the lumen of the blood-vessel and consequent softening of the brain tissue. Even a slight degree of textural change in the arterial structure is apt to be followed by an array of symptoms, made up chiefly of those in the motor field, such as tremors, weakness, etc., and those appertaining to the highest functions of judgment, memory and other intellectual faculties.

Of the many pathologic conditions supervening on the use and abuse of alcohol through a long period of time, it is surely unnecessary to speak at length. I need merely mention the frequent inflammatory processes of the peripheral nerves termed "alcohol neuritis," and reiterate the importance of the structural alterations of the blood-vessel walls with increased arterial tension, loss of vascular elasticity, consequent infiltration with calcium salts producing arteriosclerosis and endarteritis, which makes the danger of apoplexy lie close at hand. It must be recollected that *no healthy blood-vessel ever bursts save* and *alone* as *the result* of *traumatism. Whenever* and *wherever an artery breaks,* except it be due to injury, *the vessel must be diseased.* Moreover, no single factor contributes so largely to disease of the blood-vessels as much as the chronic use of alcohol poison. I have already alluded to the psychic changes of such individuals, to the loss of judgment, memory, and the other intellectual faculties, inducing changes in the products of the brain—the mind and morals. It is this which brings this question into close relation to civic life, which makes it the greatest civic psychosis.

Before speaking of the influence of alcohol on the mind, let me preface by saying that there exists in almost every case of insanity a well-marked predisposition of the individual to the development of mental disease. It would follow, therefore, that few persons of actually sound condition, anatomically and physiologically, ever fall victims to these affections. Again, it naturally follows that the weaker the inducing cause, the more pronounced should be the tendency toward deterioration. Conversely, it may be said, the more marked the atavistic tendency is, the less will be required to assist in the transition from the realms of sanity to those of mental disease.

Of the minor, practically merely contributing factors may be mentioned overwork, overstudy, emotional effects of an occasional character, the strain of acute diseases, and religious influences. You will understand that I nowise underrate the dignity of these elements, whose import is disproportionately increased if they become coincident with the physiologic periods of life.

Among civilized peoples, it has for generations been rightly deemed necessary to segregate the mental sewage of humanity. It should, therefore, be recognized as equally incumbent to thoroughly inquire into the chiefest causes through whose malignant influence these channels are kept full to overflowing. By such investigation, and by the lesson it teaches, can we hope to stem the steadily—if slowly—increasing tide of human forces whose awful effect is best seen in our insane asylums and in their close relations, the penitentiaries.

I have long held to the view that every disease has a basis to start on, and that no so-called "drug habit" forms an exception to this rule. Chronic alcoholism and its sister maladies, like morphinism, develop on a pronouncedly neurotic basis, and it seems to me the lack of success in the treatment of these affections is largely due to the fact that this neurotic element has been neglected. Allow that foundation to remain and the malady recurs. Alcoholism and similar vices belong to the realm of borderland, that great expanse abutting on insanity, and it takes but some slight contributing cause to pass over into the latter.

It has already been intimated that every individual case shows more or less predisposition to deviation from normal mental and moral standards. While the fact is true, the import of this is almost lost in comparison with noxious social and civil influences which are unfolding widespread effects. I fully realize the importance of this assertion, when I say that society and its social laws, civil life and its license are almost wholly responsible for the overcrowded condition of the insane hospitals and prisons, homes of the mental and moral degenerates. A charge so serious should be well founded. I shall seek to justify it.

The evolution of the human race is but the evolution of the individuals composing it. To evolve a perfect race, perfect individuals must be evolved. No nation passes into decadence and degeneracy save through the decay and degeneration of its components. Such truths must be quite apparent. Let us ask ourselves, then, what elements are mainly at work in the production of individual mental and moral deterioration, for the time being leaving entirely unheeded the many minor incidental factors.

The main causes I have already stigmatized as social and civic evils. To these I count habits of all kinds, yet most of all the use of alcoholic drinks; to these I count lack of hygienic principles which permits the gross spreading of diseases; to these I count, most important of all, the total disregard shown throughout the world to the bringing into it of human beings unfit to live. Daily, thousands of poor bundles of humanity are born into life with infinitely less concern

for their future welfare and perfection than is exercised in the breeding of our most common cattle.

Alcoholism is a disease, an enormously frequent one, whose ravages are tenfold worse than any other known to me, for unlike them its effects are not arrested by death. It is neither my purpose nor my desire to inveigh against the use of alcohol, but to bring to your notice the malignant effect of its abuse. You must recognize alcoholism in its chronic form as a disease. It is attended by a huge array of symptoms. Suffice it to say that chief among them is the material change in the structure of the blood-vessels, notably in the brain and kidneys, and that secondarily, and sometimes primarily, minute alterations in the intrinsic nature of the brain cells occur, which ultimately bring about total wreckage, physical, mental and moral. Unfortunately, there is nearly always a marked tendency of neurotic character present which permits the development of any vicious habit, and this tendency is decidedly transmissible and augments by transmission. The appalling truth of the latter statement is amply verified by experience with the innocent offspring of alcoholists. Go into our homes for feeble-minded, enter the reformatories for boys and girls. There, surely, personal histories repeat themselves. There, surely, the traits and tendencies of ancestry can best be studied and the secrets of hereditary burdening and bondage be learned.

The influence of heredity has never been questioned in the domain of psychology, normal and perverted. Yet it must be plain that to speak of heredity means simply to accentuate certain phases of transmission, good and bad. With a few specific exceptions, disease is never handed down to progeny from the ascendants. As we inherit peculiar quantitative traits, so we assume peculiar qualitative elements from those to whom we owe existence. As children inherit looks and features so, too, they show certain characteristics of disposition, which, when they become predominant, form a predisposition or tendency in the one or other direction. That this predisposition can be checked or fostered is a well-known fact to every student of evolution; it is even known to every breeder of livestock who studiously seeks to eliminate the bad and foster only the good qualities of sire and dam. Shall we, human beings, gifted beyond all other forms of animal life, be less faithful in the pursuit of developing ideal offspring? Yet, as a rule, that is exactly what is being done. Mental cripples crowd our asylums for the insane, moral ones constitute our criminal classes, and these crowd our prisons and reformatories. The two are closely related and both are manifestly the results of existing social and civil principles. I most earnestly believe that the factors I have spoken of are the main causes —aided, it is true, by many of the lesser degree—which make it necessary to maintain the many institutions for the care of the insane and the imprisonment of the criminal, all for the sake of protection to the welfare of the general public.

In conclusion, let me emphasize by repetition the import of the foregoing. As I frequently tell my students, "it is not the man who occasionally becomes intoxicated who gets into trouble, but the man who drinks much and never gets drunk, or he who is nearly always drunk, that becomes a candidate for disease." His are the blood-vessels that early grow less elastic and more brittle, his are the chances for apoplexy and consequent infirmity, his are the weakened will-power and moral force, his are the nerve tissues that show slight vitality. His, again, are the offspring of stunted intellectual mold, who lack the ennobling qualities of men and women, but show to a marked degree the signs of mental and moral and physical degeneracy, which make them easy victims of epilepsy, imbecility and idiocy on the one hand, and, on the other, gives them the inherited and acquired right to a berth in the insane hospitals, the jails and the penitentiaries.

If but the true import of the alcohol question were understood and a proper conception of the effect of alcohol on the physical and mental qualities were gained, I believe few generations would pass before we would find in place of our institutions for restraint and punishment, hospitals for the care and cure of a class of patients more ill often than those whom we generally regard as sick or diseased.

DISCUSSION.

DR. A. J. PRESSEY, Cleveland, Ohio.—The Doctor has covered the ground very completely, and I would say "amen" to what he has said.

DR. G. W. DRAKE, Hollins, Va.—I would like to ask the speaker to tell us the difference between the effects of pure alcohol diluted, and the various preparations of alcohol in the form of whisky, brandy, etc. I have never had any experience, but I always had a desire to know whether it is more injurious or dangerous to use pure alcohol diluted or whisky or brandy. I notice he spoke of fusel-oil. Alcohol has the advantage of not containing it. I am only entering a protest against the idea that the mind is capable of becoming insane, drunk, intoxicated or affected by any material disease. The brain may become diseased, but the mind is not subject to any effect from material objects.

DR. ALBERT E. STERNE, Indianapolis, Ind.—I only wish to apologize to the Section for cutting up my paper the way I did. I have taken the standpoint that nobody ever forms a habit except from a neurotic predisposition. It always has a basis to develop on, like any other disease, and the use of morphin and alcohol must be looked upon in its chronic form as a disease. Whether mind or matter is diseased is immaterial, it does not make much difference, and so far as the mind being capable of disease, that is something which I do not feel able to speak upon. My conception of mind differs from that of my colleague.

As regards the use of small doses of alcohol and alcohol in any form, I may simply reply that a poison is a poison no matter how it is taken. Mercury is mercury, no matter in what form we give it. The more refined the spirits, the less side issue will prevail, but the intrinsic effects of alcohol are never altered. There is a vast difference in the use of alcohol, say in the form of whisky, and beer as used in Germany. In the use of beer there is a mechanical effect observed. The large quantity of fluid dilates the blood vessels, and this insult to them renders them less elastic and, in addition to that, there is a large nutritive element which, if it is taken up as nutrition, means more work for the heart, because the new tissue must be nourished. You are overburdening the organ and, therefore, the effect on the ventricle is weakening; this is seen in beer drinkers, where it is not seen in alcohol drinkers or morphin habitues.

The question is entirely too large for me to cover in such a manner as this. I took it for granted that the alterations were all well known to members of this section. I have spoken to several neurologists about the peculiar case reported, and they have not been able to throw any light on it, or add to my conception of it.

Accidental Vaccination.—Apropos of a case of accidental vaccination reported in THE JOURNAL of March 2 (p. 584), another reported in *The Lancet* of February 23 is of interest. It was that of a man of 45, who, on Sept. 14, 1900, received a slight scratch on the outer angle of the right eye. A week previously his child had been vaccinated, and, in caring for the child at night, during the mother's illness, the scratch became inoculated from the child's arm. The man's eye became very painful and irritable, with symptoms of septic poisoning.

Thymus.—As this gland atrophies in childhood and disappears after puberty, it is probable that it performs some important function in the development and growth of the young child. If it performs any other function, some other gland or glands evidently assume such work after the age of puberty.

We know little of the physiological action of the thymus gland preparations, although Svehla[24] found that venous injections of extracts from this gland caused acceleration of the pulse by direct action on the heart, and the lowering of the blood-pressure by paralysis of the vasoconstrictors.

Good clinical results from thymus feeding in Graves' thyroid disease in cases where the thyroid treatment caused an increase of the symptoms, would seem to show that any vasodilator substance contained in the thymus was not absorbed from the stomach, but Cunningham[25] has demonstrated that thymus tissue can modify the acute cachexia in thyroidectomized dogs as well as the thyroid treatment.

Mendel[26] has lately proved that thymus gland both in man and animals contains no iodin, and traces found in any given specimen are as accidental as are traces found in any other part of the body outside of the thyroid. The thymus gland contains a large quantity of nuclein, and hence a large amount of phosphorus.

The pathology of this gland is but little known, neither do we know what relationship some of the earlier functional diseases of the infant may bear to it, such as rickets. So-called strumous conditions of young children are perhaps related to malfunction of the thyroid more than to the thymus.

The use of thymus extract therapeutically as yet is empirical. The writer has given the thymus treatment of Graves' thyroid disease a careful trial, and feels convinced that it is often of decided value, but that it is not curative.

Kinnicutt's[27] report of a trial of thymus in pulmonary tuberculosis is certainly suggestive. If the thymus has something to do with the formation or the preparation of the salts for bone growth, it may furnish earthy salts in an assimilable form for the natural cure of tuberculous deposits, at least it may work similarly and perhaps better than hypophosphite treatment. I believe that the subsequent loss of weight after the primary gain in Kinnicutt's cases may have been due to too large doses having been given. As the thymus is so rich in nucleins and phosphorus, it could be used as a substitute for any nuclein treatment.

Pituitary Body.—Not only anatomically and hystologically, but also physiologically, this gland is divided into two parts. The anterior part or hypophysis is decidedly glandular, and resembles thyroid tissue. The posterior lobe or infundibulum is largely composed of nervous elements, and Howell[28] has found that it is this part that furnishes an extract which when injected into a vein will raise the blood-pressure and increase the heart's action. This constrictor action of the blood-vessels is a peripheral one.[29] The hypophysis has been found not to furnish any such secretion.

Pathologically we have not yet separated the consequences of the disease of one part of the gland from the symptoms due to disease of the other part. Physiologists[30] have simply shown that when this gland is removed from cats and dogs, death occurs with symptoms not unlike those of thyroid extirpation, which symptoms are ameliorated by injections of pituitary extract.[31]

The pituitary body is, I believe, always diseased in acromegaly. I believe that acromegaly is probably in the beginning always a condition of giantism; in other words, sooner or later in every case of giantism the condition of acromegaly or asymmetrical growth will more or less markedly develop. I believe that the pituitary furnishes a secretion which has something to do with the normal growth of the body, and that giantism is due to a hyper-secretion of the pituitary, and that acromegaly is due to a disordered secretion of this gland.

In well-marked cases of acromegaly, the pituitary is generally found in an adenomatous or sarcomatous condition or in cystic degeneration. Reported cases of tumor growths in the sella turcica without symptoms of acromegaly probably had normal secretion furnished by some portion of this gland, as has been so many times instanced in tumors of the thyroid, pancreas and suprarenals.

The relationship of the hypophysis to the thyroid gland we do not know, but it is interesting to note that in many cases of thyroid disease the hypophysis is hypertrophied, and also in most cases of acromegaly, I think always, the thyroid is found enlarged.

I have tried pituitary feeding in three cases of acromegaly. In the first case the disease was in the very last stage, and as I treated him at a distance, and as he died in three or four months after I first saw him, I was unable to note the results of the treatment. In the second case the persistent headache and a considerable amount of the hypertrophy of the lips, hands and feet disappears under the pituitary treatment. If the pituitary is stopped, these symptoms again return to again disappear on return to the treatment. This case has also been greatly improved in muscular power since beginning the pituitary tablets. The third case, which is in the beginning of the condition, although the symptoms are well marked, is in the case of a boy 15 years old, who has been a semi-idiot all his life, and has lately grown enormously, and gives all of the external marks of acromegaly. About a month ago he developed intense and persistent earache, but examination of the ear could give no cause for such pain. I then began pituitary treatment and the pain has entirely disappeared, whatever this may mean.

It is fairly supposable that with this treatment in acromegaly we can prevent the continued growth of the body and the subjective symptoms of headache, neuralgia, muscular weakness, etc.

Suprarenal.—In 1856 Brown-Séquard[32] showed that removal of the suprarenal bodies from animals caused them to die with symptoms of shock, but that feeding of suprarenal tissue to such animals prolonged their lives, but did not prevent death, this being a different result from that obtained in operative myxedema, where thyroid feeding will prevent death. This is in perfect harmony with the later experiments which show that all of the active principles of suprarenal are not absorbed from the stomach and intestines. Later experimentation showed that if the suprarenals were injured by crushing[33] symptoms similar to Addison's disease will develop.[34] Addison, as early as 1855, pointed out the relationship between pathological conditions of the suprarenals and profound anemia with brown pigmentation of the skin and mucous membranes.

Schäfer and Oliver[35] were the first to show that the medullary part of the suprarenals contained an element which, when injected intravenously, would raise the blood-pressure higher than could be accomplished by any other known substance. Moore and Purinton[36]

seem to have proved that this crude medullary extract is many times more powerful than any so-called pure product yet obtained.[37] They also showed that no blood-raising effects could be obtained from suprarenal administration by the mouth, although this is denied by other observers.

It is interesting to note that this active blood-raising principle is absent from the suprarenals of the human fetus,[38] although we do not yet know the exact age at which this gland furnishes such a secretion.

Boruttau[39] says that when dilatation of the arterioles has been caused in the muscles by their activity, the suprarenal secretion causes vasoconstriction, especially of the splanchnic system, which gives compensation and protects the brain and spinal cord from anemia, as the thyroid gland protects the brain from hyperemia. This may be an explanation of the sudden stupefying hyperemia which occurs when severe and violent muscular exercise is suddenly stopped, as is seen so many times in the crew of the racing boat after the finishing point has been passed.

The literature on the subject of the relationship of Addison's disease to the suprarenals is vast,[40] but we have Addison's disease with degenerated suprarenals and with intact suprarenals, and extensive degeneration of the suprarenals without Addison's disease, showing, like the relationship of diabetes to the pancreas, that there may be several functional or pathological causes for the condition, one of which seems to be unquestionably the disease of the adrenals. This has been well pointed out by Adami.[41] It is interesting to note that in Addison's disease with degeneration of the suprarenals an extract of this gland is devoid of any blood-pressure raising element.

Through Dr. Bates'[42] and Dr. Swain's[33] efforts, the action of suprarenal extract in the eye and nose, respectively, is pretty generally understood.

The writer has had repeated success in aborting follicular tonsillitis by cleansing the tonsils with a saline solution, swabbing with peroxid of hydrogen, and then spraying with suprarenal, and repeating this treatment in twelve hours. The congestive stage of acute urethritis will also be benefited by injections of suprarenal solution. The strength of this solution for local application on the mucous membranes varies from 5 to 10 grains of the desiccated suprarenal to a fluid dram of water.

While the local use of suprarenal is positive, the results of internal administration of this gland are still, in my opinion, problematical, except for the possible absorption of other constituents of this gland than the blood-raising principle. Certainly in Addison's disease suprarenal extract should always be administered for the possible good from the elements of the gland which may be absorbed.

Reasoning by analogy from what we know of the action of the thyroid, we can believe that the secretion from the suprarenals could be so decreased as to give typical Addison's disease, or any degree between the normal and that degree of diminution, and give symptoms accordingly. Also it is reasonably supposable that these glands could furnish a hyper-secretion similar to a Graves' thyroid disease when the symptoms, instead of being those of vasodilatation as in the latter disease, would be of persistent high blood-pressure. It is barely possible that a hyper-secretion of this gland is one of the causes of general arterio-sclerosis and gout.

Moderate feeding of thyroid extract in these conditions, as stated under thyroid, not sufficient to produce much loss of weight; in other words, in very small doses, might be a physiological antagonist of no mean value in preventing trouble from high blood-pressure.

Unfortunately I do not find that we can raise the vascular tone or combat cardiac weakness with suprarenal extract given by the stomach or hypodermically. On the other hand, strong solutions of it should be used for any capillary bleeding surface that can be reached, such as the stomach, large intestine, rectum, bladder, vagina, and perhaps uterus, for mucous membrane congestion, cancer, etc. From the uterus or bladder I should advise its being washed out in a short time on account of the decomposition of the suprarenal extract which soon takes place.

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Tetanus Infection Through the Nose.—Experiments have been reported by Thalmann, from the Leipsic Institute of Hygiene, in which it was found impossible to induce tetanus infection through the sound or even the diseased alimentary canal or urinary passages, but that nasal lesions afforded favorable conditions, also catarrh. Tetanus germs or toxins can be inhaled without infection if the air-passages are sound. In idiopathic tetanus in man, therefore, he suggests (*Berliner klin. Woch.*, January 28) that the entering point of the infection should be sought for in the nose.

TREATMENT OF ADDISON'S DISEASE.

WITH CASE.*

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PHILADELPHIA.

On Nov. 11, 1898, a lad, 19 years of age, came under my care in the out-patient department of the Medico-Chirurgical Hospital of Philadelphia. The history which he gave was rather indefinite and incomplete. He seemed to be an unobservant youth and was probably rather below the average in intelligence, although this slight deficiency may have really been due to the disease with which he was afflicted. He was a mill operative by occupation. His weight at that time was 122 pounds, and he was about 5 feet 5 inches in height. He stated that within no long period he had lost about 5 pounds. The lad belonged to a tuberculous family and his mother had died of pulmonary involvement when he was about one year old. The patient gave a vague account of having had chills about a year previously and at the same time he suffered from pain in the back and limbs. He had not received any injury. About ten days before he presented himself for treatment he had experienced an attack of nausea and vomiting. There was also some cough. Nevertheless, he did not realize that he was seriously ill, thought himself as strong, or nearly as strong, as ever and went to work every day. His pulse was 102 and rather weak, but not extremely so. At this time he complained of lumbar and abdominal pains. He was decidedly nervous. The apex of the heart beat tumultuously against the chest. The face of the patient was of a very pronounced dark reddish-brown, or bronzed, hue. Even the hair was dry and of a similar tint. Discoloration of the skin had existed for a year. It first appeared as dark blotches upon the forehead, whence it spread to the cheeks and other parts of the face. The blotches gradually extended and became confluent, until finally the bronzing was entirely symmetrical. No other portions of the body were thus affected, except the forearms and hands. With the exception of the discoloration there were no other alterations of the surface. The trunk and lower limbs were of a peculiar deep-yellow color. Upon the mucous membrane of the mouth were some small purplish spots. In other respects the mucous membrane was pale and indicative of anemia.

Examination of the sputum and urine threw no light upon the case. The former contained no tubercle bacilli. In the urine were found some pus-cells—leucocytes; numerous crystals of calcium oxalate; some epithelium, probably from the pelvis of the kidney, though possibly from the bladder; a few shreds of mucus; one or two spermatozoa; bacteria, and a few yeast plants.

Diagnosis.—The conspicuous and very peculiar discoloration of this lad's skin furnished a clue to the diagnosis. It was of that distinctive hue which, when once seen, can never be forgotten. The color was that of bronze, that is a deep brown with a tinge of red. It resembled that which may be seen in a machinist's face after a day of toil by the furnace, discolored under the influence of heat, soot and metallic particles. The patient's employment, however, was of a very different kind and did not expose him to such sources of temporary discoloration. The pigmentation, moreover, was indelible and located in the organic substance of the integument.

A disease which produces an excessive deposit of pigment in the rete mucosum is chloasma. This affection of the skin may be due to local or constitutional causes. The latter variety, known as symptomatic chloasma, may depend upon anemia, chronic malaria, tuberculosis, cancer, or chronic disease of some important viscus. Such cases, consequently, present signs and symptoms pointing to impairment of general health and stamping the malady as much more serious than a mere disease of the skin. Symptomatic chloasma is, however, much more common in women than in men. It is associated particularly with altered conditions of the sexual apparatus. It is witnessed in pregnancy and utero-ovarian disease. Our patient was too young to be the victim of carcinoma. It is true that malignant disease attacks the youthful in rare instances, but no form of abdominal growth could be detected and no sharp pain existed. The characteristic hue of cancerous cachexia is a shade of yellow. Chronic malaria likewise imparts a sallow tinge to the skin. Although country people, originally sunburned, acquire a singular hue after having long been sufferers from malaria, yet the surface never assumes that bronzed aspect so noticeable in the patient whose case I describe. Patches of chloasma are generally of an irregular outline; the color may exhibit all shades from light-yellow to nearly black. In fact, the pigmentation may be variously colored on different parts of the same person. Idiopathic chloasma may affect robust individuals and simply present itself as an abnormal distribution of pigment in the Malpighian layer of the skin. Symptomatic chloasma is preceded or accompanied by symptoms denoting serious constitutional impairment.

A bronzed discoloration of the skin is occasionally encountered in exophthalmic goiter, abdominal tuberculosis, diabetes, cirrhosis of the liver and abdominal tumors. These various affections, however, could all be eliminated. There is a condition known as "vagabond's disease," in which the skin assumes a dark-brown shade. The increased deposit of pigment simply occurs in consequence of long-continued irritation by pediculi and scratching of the skin. This discoloration of the surface is not infrequent among tramps.

The prolonged administration of arsenic may produce a diffuse pigmentation varying in hue from brownish-yellow to deep brown. In such instances we should either perceive, or should obtain a history of, other evidences of arsenical intoxication and the patient should have been a victim of some chronic affection, such as malaria or a disease of the skin for which arsenic had been prescribed. This history does not correspond to that of the present case. The indelible stain of the skin and mucous membrane caused by silver when given for too long a period need only be mentioned. The discoloration of argyria is a bluish-gray and bears no likeness to the dusky hue observable at a glance in the subject of this paper. A bluish line due to deposit of silver is also seen upon the gums and mucous membrane of the mouth.

Chloasma generally occurs in patches, although these may extend and coalesce until large tracts are involved. As a rule, however, the discoloration is not as diffuse as in the case of which I speak. After having excluded other sources of discoloration, the diagnosis of Addison's disease was made. I have, indeed, witnessed some cases of chloasma in which the pigmentation was so diffuse that they had been mistaken for Addison's disease by experienced observers. Even in such extreme instances, however, minute inspection will reveal traces of de-

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marcation which originally separated patches of disease from the healthy skin. When the bronzing is decided it is not, in fact, usually difficult to recognize Addison's disease. The task of identification is not so easy, however, when this distinctive discoloration is absent. There are some clinical features which justify us in suspecting the existence of Addison's disease prior to the appearance of the pigmentation. One of these is marked and progressive anemia in the absence of the usual causes of that condition of the blood. The conjunctivæ and other mucous membranes are decidedly pale. There is, furthermore, a debility so extreme as to cause syncope upon the slightest exertion or even when the patient is at rest in bed. The power of resisting fatigue is almost absolutely lost. The tracings of Mosso's ergograph show the curve falling away suddenly, differing altogether in this respect from other wasting diseases, even from pulmonary tuberculosis. From leukemia and pseudoleukemia the early stage of Addison's disease may be distinguished by the absence of enlargement of the spleen and lymphatic glands. Other symptoms suggestive of Addison's disease are palpitation of the heart, dyspnea, loss of appetite, nausea, vomiting, epigastric pain and other evidences of gastrointestinal disturbance.

Etiology, Pathology and Pathogenesis.—Addison's disease results from lesions which interfere with the functional activity of the suprarenal glands. These ductless bodies doubtless perform a function important to the nutritive processes. When both are removed from frogs the animals perish, although if one is left in place the subject of experiment survives without hypertrophy of the gland which is spared. The removal of one gland from guinea-pigs is often fatal and ablation of both always causes death, according to Brown-Séquard. The adrenals are highly organized structures, abundantly supplied with blood-vessels, lymphatics and nerves. Swale Vincent[1] writes that the adrenals are regarded by the best authorities as double glands, the medullary portion being derived in some way from the sympathetic system and the cortical substance being related to the reproductive system. Both the cortex and medulla are composed of glandular tissue. The organs are supplied by the solar and renal plexuses. In the majority of autopsies of patients who died of Addison's disease fibro-caseous lesions due to tuberculosis have been found in the suprarenal bodies. In other cases the glands have undergone simple atrophy. In a third class there was interstitial inflammation, leading to atrophy. In some instances malignant disease had invaded the capsules; in others they contained extravasated blood. Finally, in a certain number there was no lesion of the suprarenal bodies themselves, but the semilunar ganglion was compressed or inflamed. This disease of the sympathetic may have led to atrophy of the adrenals. M. Raymond, in March, 1892, reported to the Medical Society of the Hospitals, the case of a woman, 27 years of age, who died from Addison's disease. In front of the spinal column was a hard, bosselated ganglionic mass, which extended from the diaphragm to the promontory of the sacrum. The right semilunar ganglion was adherent to the ganglionic mass; on the left side the structures were fused. The right semilunar ganglion was sclerotic; the nerve cells were pigmented and vacuolated; some were atrophic. The spinal cord and suprarenal capsules of both sides were intact. The relationship between the sympathetic system and the suprarenal glands is also shown by the fact that stimulation of the splanchnic nerve stimulates the activity of the glands under consideration. Tumors in this situation, however, do not always give rise to the symptoms of Addison's disease. Vincent concludes that the medullary substance of the suprarenal glands contains an active toxic principle specific to themselves and found in no other tissue. Concerning the physiological function of the adrenals two theories have been advanced. A French school of observers argues that the office of these organs is to destroy the toxic substances which accumulate in the blood as a result of the tissue changes which go on in the body. On the other hand, Oliver and Schaefer, as a consequence of their experiments and studies, believe that these organs elaborate a secretion which is taken up by the blood and is of importance to the nutritive processes of the body. They conceive that the internal secretion has a direct influence upon the muscular tissue, both of the striped and unstriped variety. Professor Howell, of Johns Hopkins University, indeed, accepts the hypothesis fully, and in a paper read before the New York Academy of Medicine, in April of this year, states that it has been demonstrated conclusively that the adrenal vein contains more of the secretion than the other veins of the body. Swale Vincent suggests that the two theories are not so antagonistic as has been usually believed, and that the secretion of the capsules may destroy waste products of muscular metabolism and may also form an active material by means of which an increased muscular tone is produced.

It has been found experimentally that the intravenous injection of suprarenal extract causes a very remarkable constriction of blood-vessels by its direct influence on muscular fiber. This action occurs even when all the nerves leading to a part are cut. Contraction of the caliber of the arterioles causes an enormous rise of blood-pressure. The muscular substance of the heart is also directly stimulated. The decided rise of arterial tension was confirmed by Prof. Isaac Ott, in his valuable experiments relative to the animal extracts, performed in the physiological laboratory of the Medico-Chirurgical College, his subjects being rabbits. Large doses of the extract excite the pneumogastric center, the consequence of which is that while the auricles continue to beat, the contractions of the ventricles are arrested. Other effects of these injections are paresis, paralysis, hematuria, hemoglobinuria, convulsions and low temperature, the paralysis being of central origin. It is thought that the vasoconstrictor action is probably due to the substance lately isolated from the medullary glandular substance by Abel, and termed epinephrin. Whether the central effects are caused by the same principle is as yet unknown. The experimental evidence appears to indicate that a healthy condition of the suprarenal glands is essential to the nutrition of muscular tissue and serves to explain the extraordinary debility characteristic of Addison's disease, in which the functions of those glands are inhibited.

A second point of clinical and pathological interest relates to the source of the coloring matter deposited in the skin and mucous membranes of patients suffering from Addison's disease. Pfoerringer[2] has recently reported a case in which he particularly studied the abnormal pigmentation. Nothnagel, Riehl and von Kahlden had already referred the origin of the pigment to the blood. Pfoerringer found in the capillaries supplying the papillary layer of the derma collections of pigment granules, some of which were free and others were situated in the interior of leucocytes. This author hesitates to draw any conclusions in reference to the manner in which pigment is produced. In this connection MacMunn's experiments and conclusions are in-

teresting and suggestive. This author believes that the function of the adrenals is to select from the blood effete pigments with their accompanying proteids, viz., hemoglobins and the histohematins. This points us to their origin in the iron-bearing and oxygen-bearing erythrocytes, or red corpuscles of the blood. Consequently, disease of the adrenals themselves or, possibly in some cases, suppression of their function by disease of the great abdominal plexuses of the sympathetic, allows these pigments to remain in the blood unaltered, from which they are deposited in the skin and mucous membranes. It assists us also to comprehend the anemia which accompanies the disease.

In view of all such facts and investigations how are we to explain the case reported in 1896 to the French Congress of Medicine, by Dr. A. Rispal, of Toulouse? The patient was a man, 24 years of age, healthy until ten months previous to death, during which period he became afflicted with pigmentation of the skin and mucous membrane, progressive asthenia, and gastro-intestinal difficulties. At the autopsy there was no visceral tuberculous lesion; there was said to be congenital absence of both suprarenal capsules; the branches and ganglia of the abdominal sympathetic nervous system were entirely unaffected. Dr. Rispal stated that he had found a record of two similar cases. Is it possible that in these cases there were accessory glands which had escaped notice at the autopsy?

Treatment.—Until a few years ago the treatment of Addison's disease was most unpromising. We stood in its presence almost utterly devoid of hope. It was formerly the custom to administer iron, arsenic, strychnin and other reconstituent remedies with the view of making a favorable impression on the blood and nervous system, but it seldom exhibited any efficacy. Agents for the relief of vomiting, diarrhea, pain and other symptoms were given according to indication. Now and then a case may have been benefited. A few are said to have recovered. I find the record of a case presented by Dr. Neumann[3] to the Berlin Society of Internal Medicine. The patient was a man, 57 years of age, who had been suddenly atacked, fourteen days before he was brought to the Moabit Hospital, by somnolence and weakness, with bronzing of different parts of the skin and mucous membrane. The patient was treated by means of the continued current and iron. The man gradually, though slowly, improved and it was not until two years from the beginning of the attack that he was able to remain out of bed all day. He then began to recover rapidly and during the following year he was able to resume his occupation. The skin gradually grew paler, the spots disappeared and at the date of the report, six years after his return to work, the color was normal. This fortunate result, however, can only be looked upon as very exceptional. Guided by the analogy between ductless glands and the brilliant effects of organotherapy in myxedema and cretinism, it was proposed that an analogous method should be attempted in the treatment of Addison's disease. The idea was advanced that the use of suprarenal extract might be found to have a beneficial influence in the last-named malady. Accordingly, it was determined to make use of the extract of the adrenals in the case of which I now write.

In view of the marked asthenia, with the tendency to dangerous syncope, which are such prominent features of Addison's disease, this patient should, either at his own home or the hospital, have been confined to his bed. In this respect, however, we could not control our patient. He was a poor, working lad and felt himself obliged to remain at his employment as long as his strength permitted. Moreover, he did not realize the gravity of his condition. To him it seemed rather a matter of curiosity that his skin should be turning so dark. As the most promising means at our command, he was immediately placed upon the suprarenals in the form of an extract. Each tablet contained 5 grains. Of these two were given each day, and the number was gradually increased. Under this treatment he began to improve. On Jan. 6, 1899, he was again brought before the class and it was noted that the nausea, vomiting and cough had disappeared, while the discoloration of the skin semed less decided. On January 20 the report was still favorable. The bronzing was thought to be a shade lighter and the general condition was fairly good. This encouraging progress, apparently in response to the treatment, continued until the beginning of March, 1899, that is, for about three and a half months. During the first five weeks of this period the patient gained 6 pounds in weight and improved a little in strength. There was considerable amendment in the state of his digestive apparatus. Unfortunately, this amelioration was not destined to a long duration. The youth was suddenly attacked by severe pain in the left part of the epigastric region, extending into the left hypochondrium and around into the back. At the same time there was almost incessant vomiting, which was much aggravated when either solid or liquid food was taken. The patient lost flesh rapidly, medicine was without avail and at the end of the third day his sufferings were ended by death.

Post-mortem Examination.—The body was very much emaciated. The areas of discoloration were of a pronounced bronze hue, as has been described in the foregoing history. The right and left pleuræ and the pericardium were normal. The heart was slightly smaller than normal. There was no disease of the valves, but the myocardium was somewhat soft and flabby, showing marked fatty degeneration. The left lung was crepitant, with some hypostatic congestion at the base. The apex showed a few small encapsulated tubercular areas. These did not appear to be active, while in close proximity were evidences of a previous inflammation, possibly also tubercular in character. In the apex of the right lung were several sclerotic areas which had formerly been of the active tubercular type. The liver was fatty and of about normal size. The spleen was unaffected.

The suprarenal glands were only slightly enlarged. On section it was found that they had undergone more or less change throughout; some portions were hard while in others caseous degeneration was quite marked.

The stomach and intestines were normal. The right kidney was slightly enlarged and congested. The left kidney was about two-thirds the normal size; its pelvis was large; the left ureter was much thickened and of double the normal caliber. The opening of the ureter into the bladder was also very large, being at least thrice the natural size. No obstruction was observed in the ureter to account for this peculiar condition. The glands of the mesentery were likewise enlarged and showed caseous degeneration on section.

Remarks.—From the findings of the autopsy it would appear probable that there had originally been a primary tubercular process in the apex of the right lung and that this had healed. The suprarenals were subsequently involved and implication of the left lung followed, although it is possible that the condition in the suprarenals might have been secondary to the disease in the right lung and have remained latent for a time. The lesions of the right lung were certainly old.

This case agreed with the majority in being of tubercular origin and nature. The suprarenal capsules were not enlarged so decidedly as in most instances. The semilunar ganglia were removed for microscopical examination. The small size of the heart was also observed in a case under the care of Dr. F. Buzzard[4] at the Northampton General Infirmary. The patient was a man of 40 years and the suprarenals were extensively destroyed by tubercular disease. The heart was so small that it was rather to be compared to that of a child of 14 than of an adult.

The result of the treatment of Addison's disease by ingestion of glandular extract is by no means so uniform and satisfactory as that of myxedema. The evidence is, indeed, of rather a conflicting character. In some cases improvement has taken place; in other instances the method has failed. In a series of cases treated in this manner Oliver reported 6 cured and 22 improved. Professor Osler[5] has described the case of a man who had exhibited symptoms of Addison's disease for two years and whose sputum contained tubercle bacilli. Notable improvement occurred from the use of suprarenal extract. At the end of five months he had gained 19 pounds, was active and vigorous. The pigmentation, however, was unaffected. Three months later he remained well and was free from cough. I am not informed as regards the subsequent history.

Dr. L. W. Schwab[6] observed the extremely rare occurrence of two cases in the same family, which was free from tubercular tendency. The patients were brothers and resembled each other closely in habits and temperament. One of these was treated by extract of the gland for two weeks, but the agent had to be suspended on account of other symptoms. In a case described by Dr. C. W. Suckling[7] the same plan of treatment was followed by a very satisfactory improvement. The patient was a man, 40 years of age, who for three months had frequently fainted, and for seventeen nights consecutively had even fainted while in bed. The man suffered from nausea, great prostration, pigmentation and leucoderma. He was given tabloids containing 5 grains each of suprarenal gland substance, beginning with two and gradually increasing as long as they caused no ill effects. After taking them for a month the patient was no better and still fainted. The quantity was again raised until he was taking 35 capsules daily when he complained that they caused pain in the back and made his tongue sore. He had, however, gained strength. The remedy was continued, but in smaller doses. At the end of the eighth month of treatment he reportd that he had not fainted for six months. Thirteen months after he first came under observation the man was perfectly well. The pigmentation and bleaching were almost gone. The pulse was normal and he could do a heavy day's work.

No conclusion could be drawn from the interesting case published by Dr. Gilbert Tyson Smith,[8] as the patient was already in a desperate condition when first seen. A woman, 46 years of age, but looking much older, had been ill for two weeks prior to coming under Dr. Smith's observation. Pigmentation was not present until the sixth day of attendance and she died on the eighth. The woman was doomed and nothing could have saved her life. The case was remarkable by reason of its rapid course. At a meeting of the Medical Society of the Hospitals, M. Béclere[9] exhibited a patient, 28 years of age, who, in addition to pulmonary tuberculosis, had for three years presented signs of Addison's disease. The patient had been treated by means of suprarenal glands by the mouth and subcutaneous injections of a glycerin extract of the glands. The woman was benefited and at the end of three years the discoloration had almost entirely disappeared. The general condition was very good. At the same meeting M. Widal spoke of a case in which decided, though temporary, amelioration resulted from the same mode of treatment. The patient gained strength but the pigmentation was unaltered. M. Haymen also referred to a case in which there was temporary improvement without any change of color. Grainger Stewart encountered a case in which suprarenal extract was ineffectual. Dr. Middletown, of Glasgow, writes of one case in which there was some diminution of pigmentation from the use of the extract of the gland.

My own patient, whose case forms the foundation for this communication, was rather younger than the average sufferer from Addison's disease. This malady occurs most frequently in men and generally between the 20th and 40th year of life. Addison's youngest patient was 24 years of age. The affection is rare, but not altogether unknown among children. In an inaugural thesis on this disease among children Dr. H. Dezirot states that one case has been observed in a babe of seven days, and one in a child of 3 years. Osler mentions one in which the disease was congenital and the child lived eight weeks; the adrenals were large and cystic. The disease does not commonly develop among children until about the age of puberty. As among adults, most juvenile patients are male. The affection generally begins with ambiguous and insidious symptoms, but without pigmentation. Darier witnessed pigmentation as the first symptom in a child of 10. Addison's disease sometimes begins in young subjects with convulsions, chorea, chlorosis and heart trouble, and is often preceded by tuberculosis of the lungs, kidneys, glands or joints. Pigmentation usually occurs at the end of several months. In six of Darier's cases among children ingestion of suprarenal glands produced temporary improvement in two, but both patients eventually died of the disease. In three cases there seemed to be slight amelioration. The results of organotherapy would, therefore, appear to be as doubtful among children as in adults. Dr. Bury[10] has described a case of Addison's disease which had existed for a year in a child of 13. The surface was deeply and universally discolored. This patient was given a glycerin extract of the gland, but with no effect, as she died nine days after coming under Dr. Bury's care.

In contrast to the marked bronzing which occurred in my patient there was but slight discoloration of the mucous membrane. It is noteworthy that other anomalies of pigmentation sometimes accompany the distinctive discoloration. Thus, in Dr. Buzzard's case, "in contrast to the general darkening of the skin there were patches of pure white. . . . The margins of the various patches were even more deeply pigmented than the surrounding skin, the appearance suggesting that the pigment had been carried out and heaped up peripherally." Dr. Suckling's patient exhibited both pigmentation and leucoderma. Moles sometimes occur. Renner draws attention to numerous wart-like eminences which he has perceived scattered over the surface. He also states that some cases are attended by atrocious itching. In a contribution to the study of Addison's disease, Dr. Rafaele Caporali[11] mentions, among other points of special interest, in a case under his care, the variable intensity of the bronzing according to the patient's general condition, the pigmentation of the finger nails, and that the regions usually bronzed were but little affected. Dr.

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Tyson Smith's case was notable for the abruptness and rapidity with which the "bronzing broke out"—an eruption, indeed,

Though there was pain in the back there was no history of a blow or other injury in the case which I now report.

Addison's disease is not infrequently preceded by a traumatism of the back or abdomen. This may perhaps act as an etiological factor, for the experiments of Schueller have demonstrated that tuberculous disease will locate itself on a site, the vitality of which has been depressed by an injury.

In concluding this study, although I would advise that in all cases of Addison's disease it is proper to make trial of this suprarenal extract, yet as most cases depend upon tuberculosis of the adrenals we can scarcely expect that the extract can cure cases in which the tuberculous process is advanced or active. In earlier stages it may be beneficial by supplying necessary elements to the blood. It has undoubtedly in certain cases achieved very excellent results. The cases in which organotherapy are useful are probably those in which there is a certain amount of atrophy, sclerosis or inflammatory alterations, but in which a portion of the gland or glands are still functionally potent and in which the ingested extract may come to the assistance of disabled but not totally destroyed organs.

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DISCUSSION ON PAPERS OF DRS. OSBORNE AND SHOEMAKER.

DR. A. BERNHEIM, Philadelphia, mentioned a case he had had under treatment since last February—one of an acute vasomotor ataxia in which he had used suprarenal extract up to 60 grains a day with very good temporary results. The heart sometimes got up to 130, 140, 150, and one time to 160 in one minute, but while taking the extract it came down to below 100, and the tremor subsided, though there was excessive perspiration. He was a young man, 24 years of age, who had to change his shirt twenty to thirty times in the twenty-four hours. He weighed the shirt one day, and found that the difference between the dry and the wet shirts was up to 260 grams respectively. In connection with other treatment the patient has entirely recovered.

DR. J. C. MELVILLE, Grand Rapids, Mich., said that in his section of the country there are few cases of exophthalmic goiter and but few of cretinism. In a case of cretinism treated by thyroid extract, he observed the most marvelous effect from any therapeutic agent that he has ever seen; there was loss of weight, with clearing of the mental faculties, and return of ordinary intelligence; the progress was gradual but decided and uniform. In exophthalmic goiter, he has used the suprarenal extract with good results, in only one case. In a case of profuse menstruation, with very rapid pulse, the disease had existed for about a year, and many other lines of treatment had been followed without benefit. In regard to dosage, he said that he used 5-gr. doses of the suprarenal extract several times a day, for twenty-one days.

DR. E. W. MITCHELL, Cincinnati, Ohio, said that he had had experience in the treatment of two cases of exophthalmic goiter in which he used the thymus extract with apparently good results. One of these cases was that of a seamstress in whom the exophthalmus was marked. Having tried other remedies without any result, he put her on thymus extract with almost immediate improvement. The tumor, which had been very large, became smaller, the appetite improved, but the tremor was not improved and the pulse-rate was not much changed. He then put her on 25 to 30 grains of hydrobromate of quinin daily, and she made a very good recovery; the exophthalmus, however, is still considerable, but is subsiding under the administration of galvanism. In another woman, in whom quinin was inadmissible on account of ear trouble, marked improvement followed administration of thymus extract.

QUANTITATIVE TESTS FOR PROTEOLYSIS.*

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BUFFALO, N. Y.

It is a remarkable fact that, after ten years' scientific—or, at least, experimental—study of the stomach, none of the methods of chemical examination of gastric contents in common use deals directly with the prime function of this organ. We draw inferences from the rapidity with which the stomach passes its contents into the intestine, often relying on fallacious tests, such as that with salol. We measure as carefully as possible the hydrochloric acid that is present in excess of that functionally active, and assure ourselves that more ferment has been secreted than has been utilized. We note how much or how little the gastric secretion has interfered with the digestion of starches by ptyalin We quantitate and qualitate abnormal accompaniments of digestion. In short, we tax our ingenuity to investigate all the circumstances and accessories of gastric digestion and ignore the direct question as to how well or how poorly the stomach has discharged its prime function of converting albumins into peptone.

The text-book methods of distinguishing one form of proteid from another are not adapted to clinical use. So far as the proteids which may be differentiated in the course of gastric digestion are concerned, no authority—so far as the writer has been able to learn—has attempted a quantitative analysis in the strict sense of the term, although many works on organic chemistry describe the reactions of acid albumin or syntonin, and the subsequent forms which proteid matter assumes during peptic digestion. In these manipulations, however, it is assumed that a comparative abundance of raw material is at hand, a condition which does not exist for the analyst of stomach contents and, explicitly or implicitly, the aim of such manipulations is merely the preparation of a bulk of more or less pure organic substances. The analytic chemist or the clinician, on the other hand, rarely desires a commercial product; he does not insist that analysis shall literally break up a mixed mass into its components, but only that the kind and proportions of these components shall be indicated. It is interesting to note how completely this practical object has been ignored by various writers who have considered the chemistry of gastric digestion, and how utterly lacking are the warnings that would have been indelibly stamped on the memory of any one who had attempted to estimate the proteids of digestion, with the object of obtaining clinical information.

Dr. Arthur Gamgee, in his most interesting and valuable work on "Physiological Chemistry," devotes pages 114-144 of Book II to the consideration of the nature, constitution and reactions of the products of digestion of proteids. In this discussion, he quotes from a considerable number of authorities, yet not a single quantitative statement as to proteid digestion is made, except as to the total dissolving power of pepsin under artificial circumstances. Pages 178-187 (including other pages by reference) are devoted to "Laboratory Work Connected with Gastric Digestion," and nine dis-

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tinct methods of research are described in detail, but there is not a hint that any one might wish to know what the stomach had actually accomplished in the digestion of proteids.

Ewald's "Diseases of the Stomach, first American edition, 1892, contains an elaborate table of reagents precipitating syntonin, albumose and peptone, but no warning is given of the quantitative difference in "propeptone" (albumoses) according as various reagents are used, nor to the obstacles to the use of mercuric salts and tannic acid, as will be explained later. On page 44, the absence of "propeptone" during the digestion of meat is noted and, on page 45, the subject is brought to a climax as follows: "According to our present knowledge, it is of considerable value to determine and estimate quantitatively, not alone the final but also the intermediate products at any given stage of digestion of albumin." Here the subject is dropped, except for an allusion to the possibility of drawing deductions from various qualitative tests. Nowhere in the clinical chapters is reference made to this matter, in spite of its "considerable value." The writer confesses that for some years he conscientiously tried to estimate by the bulk of albumin precipitated by boiling, by the ring of albumose above nitric acid and by the amount of peptone and albumose precipitated by a final reagent, how well or how poorly the stomach was performing its function and that he occasionally referred with judicious vagueness to the importance of thus estimating proteid digestion. This period of self-deception passed and the method described in the present paper is due to an effort to obtain, at least, results that are objectively correct though not necessarily so important as to solve all the mysteries of the physiology of the stomach. In the second American translation of Ewald's work, prepared by Manges in 1896, Boas' statement as to the absence of propeptone in the digestion of meat is modified to apply to "that portion of propeptone which is precipitated by rock salt and acetic acid." The importance of noting the amounts of the various products of proteolysis is less emphasized, probably because the impossibility of drawing deductions from qualitative tests had become apparent. In accord with most modern authorities, this second edition mentions ammonium sulphate as the most complete precipitant of albumoses (propeptone) and the opinion is also expressed that very little genuine peptone is formed during gastric digestion. Hemmeter and other authors who have written on the stomach practically ignore the possibilities of quantitative analysis of the proteids of gastric digestion and the few allusions to the subject that may be found in medical periodicals are lacking even in the claim of practical experience in this direction.

Before proceeding to a description of an approximately accurate clinical method of estimating the amounts of proteid present in the stomach contents, in the three easily recognizable stages of digestion, a brief review of the physiologic function of the stomach may not be out of place. Gastric digestion is largely mechanical and, in this respect, deals with all kinds of foods, without reference to chemic classification, but according to their histologic structure, cohesion, solubility, etc., to the end that the entire mass of food may be reduced to a fairly homogeneous pulp. In regard to secretion, the stomach is passive as regards fats, to some degree inhibitive of carbohydrate digestion, active only for proteids and certain closely allied nitrogenous substances, such as hemoglobin, collogen, etc. While fats are essentially foreign bodies in the stomach, starch digestion may, under certain circumstances, be even more complete than proteolysis, though the small reliance placed on either salivary or peptic digestion is evidenced by the fact that the pancreas normally completes the unfinished part of both starch and proteid digestion. According as the meal is small, easily digested and liquid, rather than hearty, mixed and solid, gastric digestion becomes important as compared with pancreatic. Thus, after a meal consisting of a cracker and a cupful of beef-juice, probably nine-tenths of the proteid is peptonized in the stomach; after an ordinary dinner, probably nine-tenths of the work falls to the pancreas. Salivary digestion may be very important if mastication is deliberate and if food is not taken too hot. Under ordinary circumstances it is of very little practical importance. As the stomach empties into the intestine little by little, the first chyme to pass the pylorus is relatively undigested, then the successive outputs become more and more thoroughly freed from proteid by digestion, until, finally, the pylorus relaxes to allow the passage of the practically indigestible residue. This last may be decomposed by bacteria; cellulose giving rise to methane, and tough fibrous animal tissue to ammonia, hydrogen sulphid, etc. Most of the proteid taken by civilized man is coagulated by previous cooking. The only considerable exception arises from eggs—mayonnaise, egg-nog, etc.—and the albumin and caseinogen of milk. For the last, a special ferment exists, secreted both by the stomach and the pancreas, though what functional activity is left for the pancreatic rennet after milk has passed through the stomach, is not apparent. Reasoning on general grounds, one might suppose that the function of rennet was to insure the coagulation of all albumin ingested in the raw state, but simple experiment suffices to disprove this tempting theory. It is questionable just how far raw albumin follows the typical course of proteolysis. Dr. L. Duncan Bulkley's hypothesis that raw milk may be absorbed undigested is not proved, while it has been proved that this is not the usual occurrence. Raw egg-albumin, however, if administered in large amounts, is eliminated as such in the urine, indicating that at least some of it has been absorbed without digestion. Such facts as this—and saccharosuria is an analogous phenomenon on the carbohydrate side—must be borne in mind as qualifications of the general conception that the function of all digestion is to render insoluble substances soluble, so that they may be absorbed.

Peptic digestion requires an acid medium, free acid acting more energetically than acid salts, mineral acid better than organic, hydrochloric acid best of all. This fact should be considered therapeutically as well as physiologically. Under the joint action of pepsin and hydrochloric acid, the changes occurring in coagulated albumin may be divided clinically into three stages: 1, the production of soluble acid albumin or syntonin; 2, the formation of albumoses or propeptone; 3, the formation of peptone. The exact transformations during proteolysis are so differently stated by different chemists—or by the same chemist in different editions—that no attempt will be made to bring them into harmony with the three demonstrable stages, nor can the moiety theory be applied clinically with our present knowledge.

The method of proteolysis here proposed, depends upon the separation of proteids into the three groups mentioned and on the estimation of the bulk of moist precipitate by the centrifuge. The method is comparatively inexpensive, easy and expeditious and it seems to be sufficiently accurate for clinical purposes. It

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must not be forgotten that a moist precipitate is very different from an anhydrous product. For example, the most compact moist precipitate of albumin which the writer could obtain by prolonged centrifugalization, contained 75 per cent. of evaporable water. As chemicals are necessary for precipitating albumose and peptone, foreign substances are introduced and, as will be shown later, the bulk of precipitate varies enormously according to the reagent used. Thus, the same technique must be used in successive experiments to allow comparison and, as in most other clinical methods of quantitation, a certain degree of empiricism is unavoidable.

The stomach contents, obtained in the usual way, are cooled under the faucet to prevent further digestion. The most tedious part of all investigations on stomach contents is the primary filtration. After trying various funnels, filter papers, cotton plugs and a small porcelain colander, it was found that there were, for practical purposes, only two alternatives: Either there must be a delay of an hour or several hours while filtration in the ordinary manner was going on, or the chyme could be prepared for rapid filtration by centrifugalization. After twenty to forty turns of the crank the chyme would be reduced to three layers. The uppermost, consisting mainly of esophageal mucus and butter, is removed with a swab of cotton. The middle layer is comparatively clear and readily passes through an ordinary filter. The lowest layer consists of the usual gastric detritus, starch cells, bits of muscle, other food remnants, bacteria, cellular elements, etc. Except as a matter of preliminary study, it is not worth while to investigate the sediment. If a search is to be made for organic proof of cancer, gastritis, ulcer, etc., the sediment from the jejune stomach must be used.

With a few exceptions made necessary by the small amount of stomach contents, all investigations by centrifuge were made on an original volume of ten cubic centimeters of clear filtrate. As will be seen by consulting the various tables, there can usually be obtained enough stomach contents at the height of digestion so that 10 c.c. may be used for the estimation of HCl, 10 c.c. for estimating total acidity (both these amounts are of unfiltered chyme), while there will remain just about enough to afford 10 c.c. of clear filtrate and a few cubic centimeters more for qualitative examination for sugar, lactic acid, starch, etc. The chromometric tests for combined HCl and other kinds of acidity are not very reliable. Gastric contents being almost always acid —always in the cases investigated in this connection—it was necessary only to boil in order to precipitate the syntonin. Control experiments with acetic acid showed that there was no appreciable amount of mucin present to swell the result, provided the process of centrifugalization and filtration was carried out as described. In slow filtration, without previous centrifugalization, a small amount of mucin might filter through, but it would not interfere materially with the tests for proteids. Boiling was done in an ordinary test-tube, on account of the thickness of the centrifuge tube. After cooling, shaking and pouring back into the latter, the albumin was separated by revolving 4000 times—corresponding to 200 turns of the crank of the Bausch & Lomb instrument—as rapidly as possible. Further revolving produced no diminution in the volume of the precipitate. As a matter of safety, the centrifuge was placed on a shelf so that the revolving parts were above the head of the operator. The liquid above the precipitate of impacted proteid could be decanted perfectly clear, filtration being unnecessary.

Ammonium sulphate, 1 gram to the 10 c.c., was added to the decantate from the precipitate of albumin, in order to produce saturation and carry down albumoses. To expedite solution, heat was employed and when the last crystal was dissolved, the tube was cooled by immersion in water. Albumose remains in solution so long as the ammonium sulphate solution is warm, but forms a turbidity when the temperature is reduced. While 4000 revolutions suffice to throw down all syntonin, 8000 were necessary in dealing with albumose. In fact, it was never possible, even by prolonged centrifugalization, to produce an absolutely clear supernatant liquid. However, all but the merest trace of albumose could be precipitated by 8000 revolutions. Nitric acid was used as a control test for albumose, after first removing albumin by boiling and filtering. Even when the white ring of the qualitative test was sharp, no appreciable precipitate could be obtained by centrifugalizing the mixture of chyme and nitric acid, the precipitate appearing to dissolve rapidly in an excess of acid. It is well known that the ring of albumin and albumose produced in Heller's test, dissolves gradually. Other reagents for albumose were not employed in this series of investigations, as none of them precipitates so completely the intermediate products of digestion before true peptone is reached, as does ammonium sulphate.

For peptone, a number of reagents have been proposed and, as usual in successive analysis, they also precipitate albumose and syntonin if the latter have not been previously removed. Tannic acid, the writer found to be objectionable while making some qualitative tests, several years ago. A solution rapidly changes to gallic acid, whose therapeutic value, it will be remembered, is due to its failure to produce precipitates with proteids. The preparation of a fresh solution is somewhat tedious and an attempt to save time by adding the powder to the chyme will only result in further delay. Most important of all, tannin precipitates starch, so that it is unavailable in many cases in which the stomach contents are being examined. While tannin does not precipitate erythrodextrin, small amounts of starch may be concealed by the latter so that it is not safe to use tannin as a reagent for peptone unless the iodin test applied to filtered chyme is free from blue, violet or red coloration. Mercuric chlorid and iodid were found to be extremely unsatisfactory as reagents, dissolving with difficulty and producing insignificant precipitates. On account of the tendency of mercuric salts to form compounds or to become reduced in the presence of all sorts of substances, organic and inorganic, one could not be sure that the small precipitate obtainable was really peptone or a peptonate, unmixed with other substances. Tanret's solution of mercuric iodid is stable and convenient, but of doubtful reliability for the purpose under discussion. On the whole, phosphomolybdic acid has proved the most satisfactory precipitant of peptone that the writer has employed, producing a very bulky precipitate, usually between a tenth and a fifth of the total contents of the tube. To avoid adding too much reagent, it is best to begin with about .5 c.c.—Merck's guaranteed solution was employed—and revolve 500 times. On adding another drop, it can be seen whether further precipitation occurs or whether there is already present sufficient of the reagent. Four thousand revolutions suffice to form a firm precipitate, not diminished by further centrifugalization, though it is probable that a more powerful instrument would have reduced the bulk still further.

In some instances, the decantate, after throwing down albumose, was divided into two equal parts, one being tested with phosphomolybdic acid, the other with Tanret's solution or tannin. No concordance could be established between the result by phosphomolybdic acid and that by Tanret's reagent. The precipitate of all forms of proteid by tannin was never equal in bulk to that of peptone alone, by phosphomolybdic acid. This fact aroused the suspicion that the precipitate by the latter might include something else than peptone, for instance the result of a reaction with ammonium sulphate or with some of the numerous inorganic or organic substances contained in chyme. Control tests, however, showed that no precipitate occurred with ammonium sulphate nor with substances present in the stomach contents after precipitation of all proteids by tannin. With normal urine, which contains most of the inorganic radicles and examples of the extractives that might be present in stomach contents, only a blue color was produced, never a precipitate. In several cases of albumosuria—formerly called peptonuria—phosphomolybdic acid precipitated nothing after the albumoses had been removed with ammonium sulphate, though, as was to be expected, heat and nitric acid still left proteids precipitable with phosphomolybdic acid. Entirely aside from these crude experiments, there is good chemic authority that the only substances liable to cause a confusion in using phosphomolybdic acid as a test for peptone in chyme, are alkaloids. It is impossible that alkaloids could be present in the stomach in sufficient quantity during life to interfere with the test for peptone.

The writer acknowledges, with thanks, information as to chemic reactions furnished by Herbert M. Hill, Ph.D., of Buffalo; J. Bergen Ogden, M.D., of Boston; Henry Leffmann, M.D., of Philadelphia, and Albert J. Leeds, M.D., of New York. The writer also acknowledges with the most hearty thanks, the sacrifice of time and convenience of the following-named graduates of the Medical Department of the University, of the class of 1898. For an overworked medical student to devote the only half-holiday of the week to laboratory study, not only on an empty stomach, but on a stomach which had itself been the object of experimentation, evinces a degree of enthusiasm not often found this side of the Atlantic. The takers of the test meals mentioned in Table 1 were: Drs. Richard J. Gould, Gifford Truesdell, Edith W. Stewart and H. M. Smith.

(To be continued.)

Experimental Spinal Cocainization.—The *Cbl. f. Chir.* of February 9, mentions the experimental work of a Russian confrère Golebski, who experimented on forty-six dogs and numbers of frogs, inducing analgesia by spinal cocainization. The results coincide in the main with those observed on man. Frogs first lost their sensibility to the effect of acids on the skin, and retained longest the sensation of simple contact. Electric excitability survived sensibility to pain in dogs. Ataxia of the hind legs always accompanied the analgesia. The temperature rose with large doses of cocain, but this could be prevented by injecting antipyrin with the cocain. He was able to ward off strychnin, picrotoxin and aconitin convulsions by means of this spinal cocainization, and even succeeded in making a stomach fistula on dogs that were not fastened in any way. The *Sem. Méd.* of February 20 states that Carini's experiments on dogs injected with as much as 20 cg. to 1 gm. of cocain, demonstrated changes in the nerve cells afterward, similar to those observed in the spinal cord after temporary compression of the abdominal aorta. These changes are merely brief, transient processes of reaction on the part of the cells, with complete restitution.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

REUBEN PETERSON, M.D.

Professor of Gynecology Post-Graduate Medical School; Assistant Clinical Professor of Gynecology, Rush Medical College; President of the Chicago Gynecological Society.

CHICAGO.

(Concluded from p. 738.)

3. URETERO-TRIGONO-INTESTINAL ANASTOMOSIS.

Of the twenty-one dogs operated on, twelve died from peritonitis due to sloughing of the bladder-flap. Four died of peritonitis from other causes, and there were five operative recoveries.

This series of experiments was undertaken for the purpose of studying the changes resulting from the union of the intact vesical ureteral orifices with the intestinal tract. A supplementary object was to simplify Maydl's operation, which seemed unnecessarily complicated. In this series also the operative results were bad, but an entirely new field was being approached, and one slip in technique was responsible for the loss of twelve dogs. I have been unable to find in literature a record of a single dog saved after transplantation into the bowel of the trigonum with its ureteral orifices. Kalabin attempted the operation on five dogs, and Matas two, but they all died of peritonitis. In the first experiments care was taken to preserve the ureteral arteries, which could be seen running close to the ureter and approaching the bladder-wall close to the ureteral orifices. It was assumed that the trigonum, as well as the ureters, was supplied by these arteries. Accordingly, in the first twelve experiments the vesical arteries were tied before cutting out a rectangular flap containing the ureteral orifices. This was done in order to control hemorrhage, which was quite profuse when the bladder was cut across without previous ligation of the artery.

The dogs lived for a number of days, finally succumbing to peritonitis with sloughing of the transplanted flap. The specimen from the twelfth dog was subjected to microscopic examination and the flap demonstrated to be necrotic, although macroscopically it appeared in good condition, and there was no leakage of urine into the abdominal cavity.

The blood supply of the trigonum in the dog was then studied by plaster injections and dissection. It was found that the main blood supply to the trigonum was from the vesical arteries, each of which is given off from the internal iliac artery. These arteries anastomosed with the ureteral arteries, but not freely. This explained why, in the previous experiments, the color of the flap was markedly changed only in those dogs that lived quite a number of days. There was some blood going to the flap from the ureteral arteries, but not enough to nourish it. In the next nine experiments the vesical arteries were preserved, with five recoveries from the operation. Two of these dogs died respectively in eight and twelve days, from abscesses in the abdominal wound, but they proved to be just as valuable for studying the changes following the rectal implantation of the trigonum.

The four deaths were from peritonitis resulting from attempts to unite the vesical flap to the bowel by a simple continuous suture. The result was leakage, peritonitis and death. The operation is difficult to perform on the dog, because of the absence of a sigmoid flexure and the

* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

difficulty encountered in pulling down the gut to meet the flap. The flap cannot be drawn up beyond a certain point on account of the necessity of preserving the vesical arteries which are given off from the internal iliac low down.

Operative Technique Finally Adopted. After opening the abdomen the bladder is brought into the incision and the urine evacuated by careful pressure. The urethra is ligated low down; in the male as near the prostate as possible, by passing the ligature inside the vesical arteries. The urethra is clamped just above the ligature and severed. The abdomen is protected by sponges and the clamp removed, the residual urine being expressed in a sponge. The urethra and bladder are now

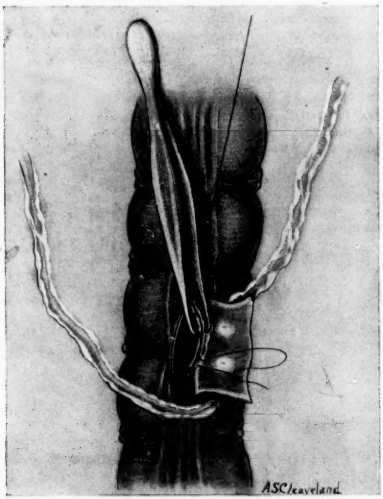

Fig. 16.—Showing incision through intestinal serosa and muscularis. Long margin of vesical flap united to one side of bowel incision by right-angled through-and-through continuous suture.

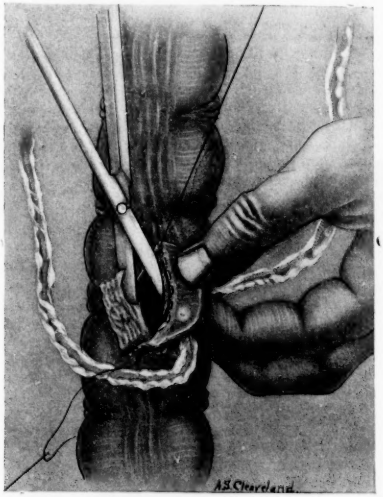

Fig. 18.—Showing the removal of the mucosa by the scissors Up to this time the bowel has remained closed.

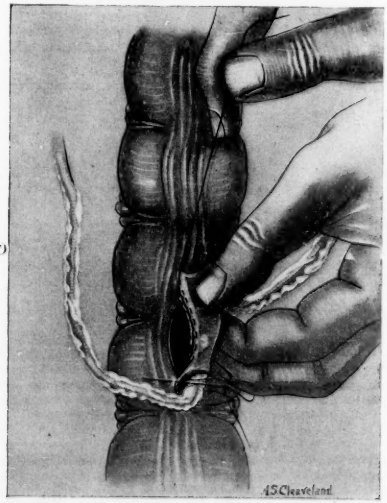

Fig. 17.—Showing method of turning angle and the inversion of the peritoneal surface of flap.

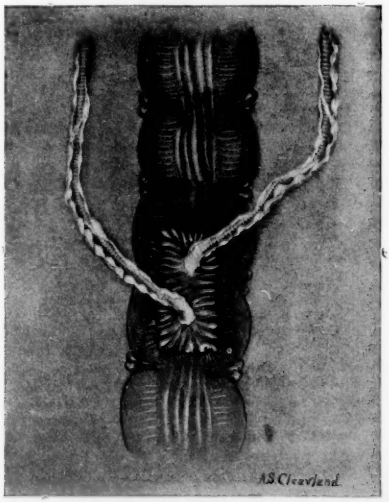

Fig. 19.—Suture of flap completed. Peritoneal edges still further rolled in by a series of Lembert sutures.

split with the scissors between the vesical arteries to the fundus of the bladder. A rectangular flap is now formed by cutting the bladder across, care being taken to leave a half-inch border around the ureteral orifices. (Fig. 15.) The ureters are not loosened from their peritoneal coats, as shown in the illustration. In fact, they are hardly to be seen, and are only avoided in the subsequent stitching by placing bougies in the ureteral orifices. A fold of the descending colon is now seized and drawn down and incised longitudinally at such a point as will be most convenient for meeting the bladder-flap. The incision should be just a trifle less in length than that of the flap, and should be made down to the mucosa. The flap should now be placed against one side of the incision with serosa against serosa and the two borders united with a through-and-through right-angled stitch. (Fig. 16.) This stitch includes on the bowel side only serosa and muscularis, but all the layers on the flap side. When the lower end of the incision is reached the same stitch is employed, only, to save time, a single bite is made on the bowel side. The mucosa is pushed toward the center of the vesical flap, so that part muscularis and part serosa are brought in contact with the bowel serosa. A perfect inversion of the edge is accomplished by means of the suture. (Fig. 17.) When one-third of the distance has been closed on the opposite side from which the stitch was started, as much of the bowel mucosa is removed by the scissors as may be deemed necessary to allow the ureteral orifices to fall within the incision. (Fig. 18.) After the low ends of the suture have been tied, another continuous suture, or a series of Lembert's sutures is applied in order to guard against any possible leakage. (Fig. 19.)

Experiment 67. Dog IX. (Dog XI. Pathological Reports.) Large yellow male. Operated on January 18, 1900. One-half of the trigonum, with left ureteral orifice, was anastomosed with bowel according to method described above, except the bowel mucosa was simply incised, and no portion removed. The bladder was sewed up with two rows of silk sutures. The dog made an uninterrupted recovery, and was killed March 24, 1900, sixty-five days after the operation.

Pathologist's Report. Atrophied kidney, due to occluded ureter. Capsule adherent, thickened, and opaque; kidney anemic, grayish-brown surface, slightly nodular. Left ureter twice the size the right and non-patent.

Bacteriology. Smears from liver, kidney, spleen, and heart negative.

In this case the incised mucosa had united, and after occluding the ureteral orifice had produced an atrophic kidney. This fault in technique was remedied after this case.

Experiment 66. Dog X. (Dog VI., Pathological Reports.) Small, yellow dog. Operation January 18, 1900. Right ureterorectal anastomosis by old method. Left trigonum with its ureteral orifice anastomosed with rectum. Died from sloughing of abdominal wound, giving rise to general peritonitis thirteen days after the operation.

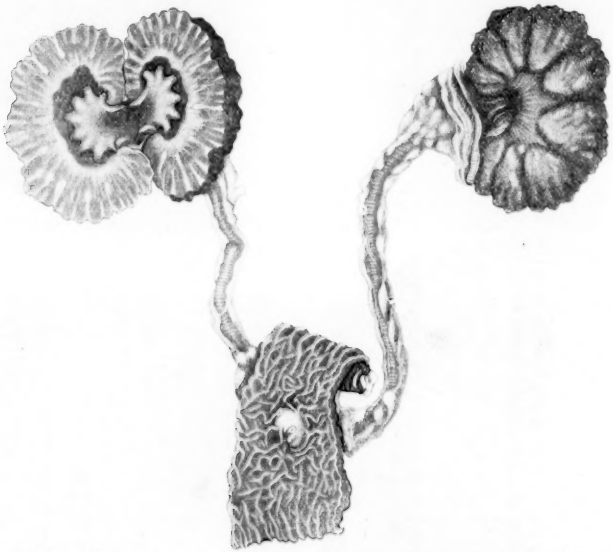

Fig. 20.—Kidneys, ureters and section of rectum of a dog killed thirteen months after bilateral rectal anastomosis.

Pathologist's Report. Left kidney: Capsule adherent; cortex and medullary portion equally thick; pelvis smooth. Right kidney: Opaque; capsule adherent; cortex shows hyperemia and yellow millet-seed sized areas—former surrounding latter. Swollen and congested cortex and purulent rays from pelvis to cortex; pelvis dilated; papillæ necrotic, pyelonephritis.

Bacteriology. Left kidney negative; right kidney contains colon bacilli.

Histopathology. Left kidney fairly normal, shows only some hyperemia, and slight cloudy swelling of lining epithelium of convoluted tubules; no bacilli found. Right kidney shows acute suppurative interstitial nephritis, with colon bacilli present.

Experiment 68. Dog XI. (Dog XII., Pathological Reports.) Small, yellow dog. Operation January 24, 1900; killed March 24, 1900. Same technique as above, except mucosa was denuded slightly about edge of the flap; good recovery.

Pathologist's Report. Very ill with mange when killed, two months after operation. Right and left kidney capsules non-

adherent; normal; no pyelonephritis. Ureters normal; spleen large and soft; liver fatty. Fibrinous thrombi in left ventricle.

Bacteriology. All smears and cultures from the above organs were negative.

Histopathology. Kidneys show slight parenchymatous changes, due probably to mange. Thrombus in left heart; infected spleen and fatty liver. No pyelonephritis nor the sequelæ of a possible preceding pyelonephritis were found.

PLATE I.

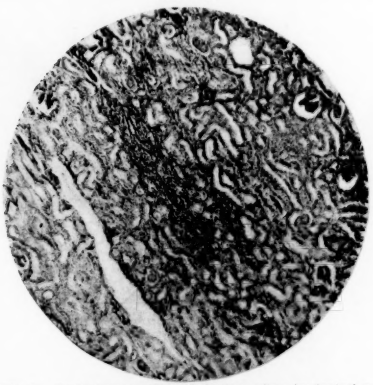

Fig. 1.—Beginning ascending infection after implantation of ureters in rectum. Leucocytic interstitial infiltration, surrounded by convoluted tubules, with beginning cloudy swelling.

Fig. 2.—Kidney (ureters in rectum) showing invasion by the bacilli coli at an early stage of ascending infection. The dark masses in uriniferous tubules consist entirely of coli bacilli. Some contain casts which are sown with coli bacilli.

Experiment 69. Dog XII. (Dog VII., Pathological Reports.) Brown spaniel bitch. Operation January 25, 1900; died March 10th, forty-four days after operation. Ordinary technique was employed, except in trimming the vesical flap too much was removed and ureteral orifices were laid bare. Flap was sewed transversely across the bowel.

Pathologist's Report. Both kidneys show opaque adherent capsules and pyelonephritis. Both ureters patent; hydro-ureter right side; liver and spleen normal. Both kidneys show coli.

Histopathology. Necrotic papillæ. Polymorphonuclear leucocytes in tubules in great numbers, with small-cell infiltration in ureteral tissue. Some necrosis and much cloudy swelling and fatty degeneration of epithelial cells of convoluted tubules.

Experiment 74. Dog XIII. Brown female dog. Operation March 30, 1900. Left half of trigonum with mucosa removed, and right half with mucosa intact, anastomosed with rectum. Dog died in eight days from abscess of abdominal wall.

Pathologist's Report. Left kidney shows pyelonephritis; ureter normal, pyelitis, with slightly adherent capsule. Right kidney has a very adherent capsule. Organ slightly hyperemic; no pyelonephritis. Heart: yellow fibrinous thrombi in both ventricles.

Bacteriology. Smears of left kidney, cortex, and pelvis show pure coli. In the pelvis also a few tetanus bacilli. Left kidney: Cortex coli. Right kidney: Cortex contains a few very small, thin diplococci.

PLATE II.

Fig. 3.—Kidney (ureters in rectum) showing invasion by the bacilli coli at an early stage of ascending infection. The dark masses in uriniferous tubules consist entirely of coli bacilli. Some contain casts which are sown with coli bacilli.

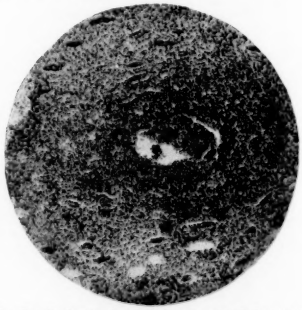

Fig. 4.—Small abscess in medullary pyramid due to ascending coli bacilli infection twelve days (ureters in rectum).

Summarizing the results of these five experiments, we find that in one case the ureter was occluded from faulty technique, with formation of an atrophic kidney. Of the four remaining cases, one had a non-infected kidney, where the trigonum was implanted intact; pyelonephritis on the other side, where a uretero-rectal anastomosis had been made. One died in forty-four days from active pyelonephritis, where the mucosa over the ureteral orifices had been accidentally removed. One lived two months without signs of infection in the kidneys. One had pyelonephritis after eight days, where the mucosa was removed from the ureteral orifice, and no signs of infection in the other kidney, where the trigonum was implanted intact.

The experiments fully confirmed the observations of others, that in the dog the rectum serves as an admirable substitute for the bladder. In most instances, directly after the operation, some rectal tenesmus existed, but this soon passed away, and the animal had perfect sphincteric control, and passed urine mixed with feces at regular intervals.

It seems questionable whether uretero-intestinal implantation without a vesical flap will ever be accomplished without a certain amount of resulting stenosis of the ureteral orifice. This stenosis may not be sufficient to entirely obstruct the urinary stream, but it will be enough to impede it somewhat and give rise to the dilatation of the ureter in varying degrees. Without having actually accomplished an anastomosis with the Boari or Chalot button, it would seem to me that the uretero-rectal union by these means would be open to the same dangers of stenosis as a union secured by the method detailed above. Boari, in the article describing his button, does not appear very sure that stenosis will not result from its use, for he speaks of a modification of the instrument whereby stenosis will be rendered impossible. The second series of experiments has proved that ascending renal infection is not prevented by an unobstructed flow of urine, since the case of lateral anastomosis without stricture was quickly followed by a violent infection.

PLATE III.

Fig. 5.—A later stage of ascending coli infection. Specimen from medullary pyramid. A central necrotic area with few bacilli, surrounded by a dense zone of leucocytic infiltration.

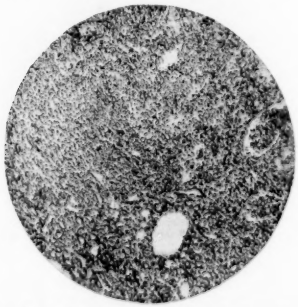

Fig. 6.—Ureter in rectum. Interstitial suppurative nephritis due to ascending coli infection. The leucocytic infiltration is so extensive that only little of the kidney structure can be seen. (Cortical portion.)

PLATE IV.

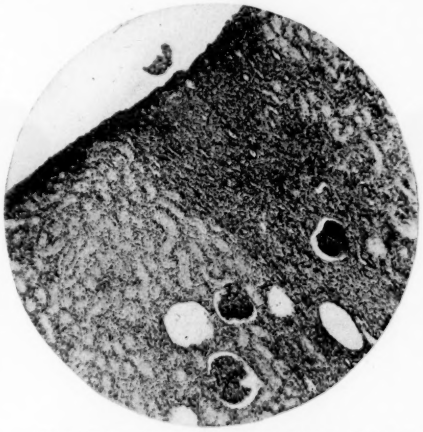

Fig. 7.—Thirteen-months dog. Granular kidneys. The dog had a pyelonephritis, became immune to coli bacilli, and the many small abscesses spread over the cortex of both kidneys resulted in retracting maturing scar tissue. The elevated portions surrounding these show fairly normal parenchyma. The retracted portions consist of matured new connective tissue with atrophic glomeruli, thickened capsules, dilated and desquamated tubules.

PLATE V.

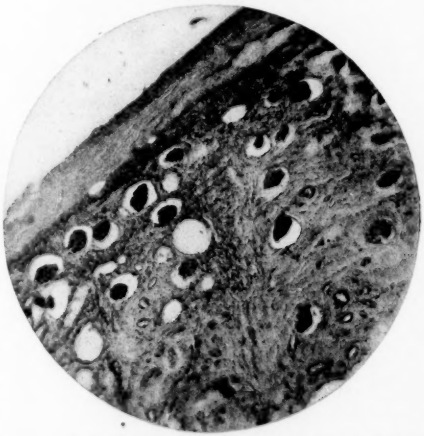

Fig. 8.—Results of healed pyelonephritis ten months after implantation of ureters into rectum. A cirrhotic contracted kidney. Only scar tissue with atrophic glomeruli, dilated desquamated tubules.

Tuffier claimed that if the ureter were cut off close to the bladder and implanted into the rectum, its musculature by forcing along the urine would keep the ureter clean and free from infection. In order to test the truth of this statement I intentionally severed the

ureter as near the bladder as possible in Experiment 66, Dog X., yet pyelonephritis resulted thirteen days after the operation.

My experiments show beyond question that renal infection is not so rapid nor so severe when the vesico-ureteral orifice is preserved. It is not claimed that infection will not occur after the operation, but that at least one case of uretero-rectal anastomosis where the orifices were retained intact did not show infection after

PLATE VI.

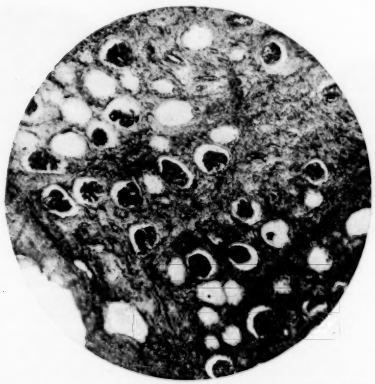

Fig. 9.—Results of healed pyelonephritis ten months after implantation of ureters into rectum. A cirrhotic-contracted kidney. Only scar tissue with atrophic glomeruli, dilated desquamated tubules.

Fig. 10.—Thrombosis of portal vein. Liver. (Passive hyperemia. Atrophic areas.)

two months. The animal surviving this length of time had to be killed for the purpose of this article. No amount of speculation will settle the question of infection later than two months after the operation. This must be determined by further experimental work.

Why does not infection occur as readily when the ureteral orifice is implanted intact? Theoretically, it has been argued that infection has been prevented by the oblique course of the ureter through the implanted vesical flap, or that germs were prevented from ascending by the sphincteric or valve-like apparatus about the ureteral orifice.

That the oblique course of the ureter through the bladder-wall does not prevent an ascending renal infection has been proved conclusively by certain of my experiments. Whenever the mucosa was removed from

PLATE VII.

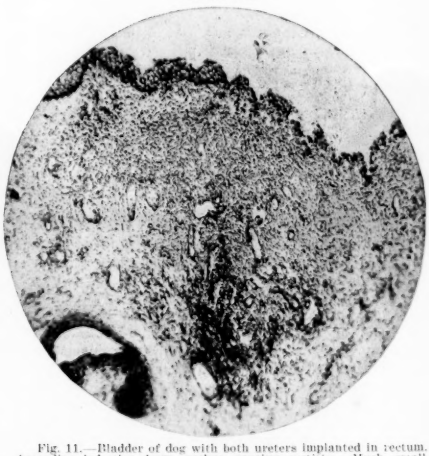

Fig. 11.—Bladder of dog with both ureters implanted in rectum. Ascending infection from urethra, causing cystitis. Much small cell infiltration of mucosa with desquamation of covering epithelium.

PLATE VIII.

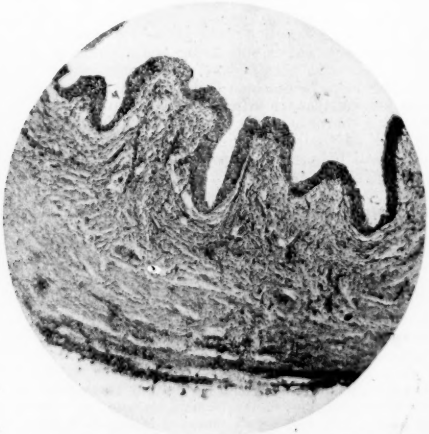

Fig. 12.—Ureter (implanted in rectum). The kidney showed pyelonephritis. The ureter looks comparatively healthy in strong contrast to the necrotic papillæ of same kidney.

the ureteral orifice infection resulted, although the obliquity was unchanged by this procedure. The oblique course of the ureter in the bladder-wall serves to effectually close the ureter when the bladder is distended and prevents any ureteral reflux. So perfect is this closure that a bladder can be distended with air or

water through the urethral orifice without any escaping through the ureters. This mechanical closure of the ureteral orifices does not take place after the transplantation of the vesical flap, since the rectum is not a closed cavity and the same forces are not called into play.

In order to determine definitely the relations of the ureter to the different vesical muscle layers and to ascertain the existence or non-existence of a sphincter or valve at the ureteral orifice, I caused to be made a set of serial sections through that part of the dog's bladder-wall through which the ureter passes.

The results of these microscopic examinations may be stated as follows:

1. The sections do not show a mucosal valve guarding the entrance to the ureter.

2. The circular muscle layer of the ureter is not especially prominent.

3. The bladder muscle fibers in themselves do not act as a sphincter, nor is there any sphincteric arrangement about the vesical ureteral orifice.

4. Sections of the ureter within the bladder-wall show a flat slit-like opening.

Thus it will be seen that all theories based upon the supposed action of a valve or sphincter apparatus guarding the ureteral orifice, whereby ascending infection is prevented, must be set aside from the lack of anatomical evidence. From this it will naturally follow that all attempts to prevent infection by imitating in the bowel-wall the normal course of the ureter will prove futile, as the post-mortem findings of Martin's cases have clearly shown. Beck's theory that in his case infection was prevented by inserting a portion of the ureter within the bowel has been shown to be incorrect by numerous experiments. The portion of the ureter lying within the bowel soon completely sloughs away, and, far from preventing infection, is one of the chief factors in its production.

What can be said of Fowler's mucous valve formation for preventing infection? As far as the case is concerned the patient is still living and apparently well after three and a half years, yet experimental work would lead us to conclude that the kidneys have been infected, but that the infection has been overcome with resulting contracted kidneys. In order to ascertain the value of such valve formation as Fowler recommends, I performed the operation upon a dog, March 31, 1900, carrying out his technique strictly, except that only one ureter was implanted. The dog recovered and was killed at the end of twenty-seven days. The kidney corresponding to the implanted ureter was decidedly smaller than the other and showed evidence of ascending infection. No bacteriologic or microscopic report on the specimen has yet been made. The ureter was slightly dilated. There was not only no vestige of the ureter which had projected into the bowel cavity, but the mucous flap itself had disappared, and the ureter, fairly patent, opened through a small slit in the mucosa.

The most plausible theory regarding infection or non-infection would seem to be that any traumatism to the ureter, whether in the form of its complete section or injury to its orifice by removal of the vesical mucosa, sets up an inflammatory action about the ureteral orifice which diminishes its power of resistance and allows of ascending infection. Whatever method of intestinal anastomosis of the severed ureter be employed, inflammatory changes are bound to be present, and infection will follow. Whereas, when the ureteral orifices are implanted together with the bladder flap, any operative traumatism is exerted upon the latter and the unaffected ureteral orifices are able to prevent the entrance of bacteria.

GENERAL CONCLUSIONS.

1. The primary mortality of uretero-intestinal anastomosis, both in experimental work on animals and in man, is exceedingly high.

2. The best technique is that requiring the least amount of suturing of the ureters themselves.

3. All efforts to prevent ascending renal infection in animals or in man where the ureter has been implanted without its vesical orifice have proved futile.

4. It is impossible to determine in advance the extent of the infection which will result from uretero-intestinal anastomosis. The patient may die in a few days of a pyemia or in a short time of pyelonephritis, or in rare cases may recover from the infection, with resulting contracted kidneys.

5. Hence the operation is unjustifiable, either for the purpose of making the patient more comfortable, as in exstrophy of the bladder, vesico-vaginal or uretero-vaginal fistula, or for malignant disease of the bladder.

6. The results of uretero-intestinal anastomosis through the formation of vesico-rectal fistulæ have not been favorable up to the present time.

7. The success of Frank's experimental work in vesico-rectal anastomosis justifies the expectation that the future results of this operation will be more satisfactory.

8. The primary mortality of utero-trigono-intestinal anastomosis is low for an operation of this magnitude.

9. While it can not be denied that ascending renal infection may occur after this operation, the infection, as a rule, is of such a type that the chances of the individual's overcoming it are good.

10. Hence the operation of implanting the vesical flap with its ureteral orifices into the intestine is a justifiable surgical procedure.

11. There is no valve guarding the vesico-ureteral orifice; nor does the circular muscle layer of the ureter nor do the bladder muscles themselves act as a sphincter.

12. It has been abundantly demonstrated by experimental and clinical work, that the rectum tolerates the presence of urine and acts as a good substitute for the bladder, and that good control over the anal sphincter will be maintained.

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103 State St.

Quinin as an Oxytoxic.—McGee (*Bul. of Cleveland General Hospital*, ii, No. 4) believes quinin possesses evident power as an oxytoxic. He has "given it in almost a routine manner for years, in cases of uterine inertia." He finds that while it will not initiate labor pains in pregnancy, in the second stage of labor, when there is an obstacle to delivery or contractions are deficient in force, it frequently increases their power and so hastens delivery. He ascribes its effects to a general tonic action and increase of nervous energy, rather than to any specific power, such as ergot has, and he says it is devoid of the dangers of the latter. He gives 5 grs. every twenty minutes or so till about 20 grs. are taken; it is best prescribed in solution; added to a small quantity of brandy or whisky diluted with hot water and well sweetened, he finds it is rarely refused.

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DIPHTHERIA.

There are few chapters in the history of medicine more interesting and more complete than that of the evolution of our knowledge of diphtheria; and the stages by which this advance has been made have been the result not of accident nor of chance, but of systematic and industrious investigation of the best scientific character, interpreted by a high order of intelligence. Ulcerous and membranous anginas have long been recognized and described, but the first severe and widespread epidemics of recent times are recorded as having occurred in the seventeenth and eighteenth centuries. During the early part of the nineteenth century France was assailed by numerous disastrous epidemics, which played sad havoc, even among the royalty, so that Napoleon I., in 1807, offered a prize for the best essay on croup. Great confusion regarding this disease existed until Bretonneau published his famous work in 1826.

Escherich,[1] in an interesting communication, discusses the changes that have taken place in the clinical conception of the term diphtheria in the course of the past century, especially as a result of bacteriologic investigation, as well as certain related topics. Bretonneau not only verified previous descriptions of the disease, its dissemination by contagion, the appearance of the deposit, the stenotic and toxic characteristics of its course, and the varying localizations and sequels; but he further established the pathologic-anatomic basis of these manifestations. From epidemiologic and post-mortem considerations, he divined the specificity of the disease, and suggested the existence of a living contagium. Clinically he recognized the identity of croup and diphtheria, attaching the greater importance, however, to the effects of laryngeal obstruction, to the neglect of the symptoms of intoxication. He appreciated the utility of tracheotomy and practiced it successfully. Trousseau, a friend and pupil of Bretonneau, laid great stress on the toxic manifestations, and considered the disease a general one with local lesions.

Confusion arose from the application of the terms croupous and diphtheritic to fibrinous or membranous deposits upon mucous membranes in general, and the inclusion of all superficial necrotic lesions of wounds and the various mucous membranes, especially the tonsils in cases of scarlet fever, under true diphtheria. The final and decisive discrimination was, however, not reached until the discovery by Klebs, in 1883, and the cultivation by Loeffler, in 1884, of the diphtheria bacillus. This was followed by the isolation of the toxin generated by the bacillus, and this, in turn, by the development of immunizing methods in animals, and finally, in 1894, by the preparation of the antitoxin—the entire series of events constituting one of the most brilliant and most beneficent discoveries in the history of medicine. The severity and the course of the disease were at first attributed directly to the virulence and the number of the active bacilli, but evidence was soon discovered showing that those conditions are due in no small measure to the state of the body, and that this is probably dependent on the presence or absence of protective substances. An additional factor is to be found in the existence of mixed infection, in part with streptococci.

The most important feature of the advance in our knowledge of diphtheria consists in the treatment and its results. Debilitating and antiphlogistic means were superseded by general supporting and vigorous local treatment with astringents, caustics and antiseptics, while tracheotomy and later intubation came into practice for the relief of laryngeal stenosis. The use of steam for inhalation proved a useful adjunct. The results of treatment were, however, unreliable and unsatisfactory until the discovery of the antitoxin in 1894. Since then the mortality has been cut in half, the gain being most marked the earlier the specific remedy is employed and the dose chosen sufficiently large. The necessity for surgical intervention has also become less, and, when it has been required, the results have been better than heretofore, while complications and sequelæ are more uncommon. The prophylactic value of the antitoxin is somewhat impaired by the circumstance that the immunity conferred is of brief and uncertain duration, but evidence exists showing that it may nevertheless be successfully directed to the breaking up of epidemics in hospitals and other institutions, and in private dwellings. In the treatment, it can not be too forcibly emphasized that the dose to be employed is the largest that the severity of the case indicates, and its repetition will be influenced by the same criterion. An important point to be appreciated is the necessity for employing as concentrated solutions as possible, as such secondary effects as have been observed after injection of the antitoxin are due not to the active principles but to the serum in which they are dissolved. The two possible contraindications to the use of the antitoxin consist in the presence of nephritis and the so-called lymphatic constitution.

1. Berliner klin. Woch., 1900, No. 2, p. 33.

THE STEREOGNOSTIC SENSE.

In 1883 Charles Bell originated the term "muscular sense," and attributed the conception of place and position to a particular form of sensation located in the muscles. This sense was thought to be a primitive one, due directly to the "organic activity of the muscular

contractions." According to Puchelt, it was assigned the rôle in the perception of form and was called, at the time, the stereognostic sense.

It is to-day generally believed that the stereognostic sense is dependent on the use of the tactile and muscular senses. To examine the stereognostic sense of a patient methodically, one has only to use geometrical bodies, such as balls, half-spheres, octahedrons, etc., preferably made of wood, measuring from 3 to 6 cm. in diameter, and ask the patient to describe them, as they are placed in his hands.

As the result of a somewhat exhaustive study, Sailer[1] has concluded that the stereognostic sense is due to a complex sensory perception, the impulses of which are probably received in the parietal lobe of the brain and then recognized in consciousness by some higher center or group of centers; that it is lost if tactile sense is lost, is greatly impaired or lost if localization-sense is lost, and is usually, but not always, disturbed if the muscular sense is lost.

The nature of the stereognostic sense, upon which the faculty of orientation is in all probability based, is still thrown open to question by the doubt cast at the present d y upon the existence and nature of the muscular sense. This latter sense receives much attention in neurologic literature, though physiology has not yet fully recognized the existence of such a special form of sensation. Since Bell's first mention of it, there have been promulgated many views to explain the perception of active and passive motion, resistance, weight, solidity, volume and position. Some are inclined to regard it as an elementary sense inherent in the muscular fibers, or at least dependent on special nerves going to those fibers. Lewinski argued that the muscular sense was merely the sense of motion perceived by the tactile organs found in and around the articular surfaces of the joints. Schiff taught that the tactile organs in the skin overlying the contracting muscles, gave rise to the sense of active and passive movement. Others demonstrated that the muscular sense depended on a multiplicity of indistinct sensations, localized in the body segments, articulations, muscles and skin, the skin being by far the most prominent. It was taught by the psychic school that the sense of muscular activity is really due to a central perception of the effort exercised at the periphery; that there is a conscious perception of the muscular conditions in general; and that of course any change in those conditions will immediately be recognized and correlated in the sphere of consciousness. In 1893 Wundt declared that the muscular sense was in no way to be attributed to the exercise of the muscles, but rather to the "cellular function of the motor zones" in the cortex. Oppenheim recommends that the term "muscular sense" be dropped entirely; for, according to the definition by Goldscheider, it includes the sensation of passive movement, the sensation of active movement, the sensation of heaviness and resistance, and the sensation of position.

1. Jour. of Nerv. and Ment. Dis., March, 1899.

In a recent and noteworthy monograph Bonnier[2] frankly declares that there is no special muscular sense, but that the so-called muscular sense and all it includes is nothing more nor less than a modified form of ordinary tactile sense. We have a sensation of attitude or variation of attitude, due to a sensation of segmental or peripheral activity, and a sensation of central activity or innervation. This segmental sensation is an internal tactile sense—articular, aponeurotic, ligamentous, muscular, etc.—and is merely an adaptation and transformation of the external tactile sense. It is comparable to the involution of the tegumentary structures recognized in the evolution of the eye, ear and other special senses. The stereognostic sense, therefore, as well as the sense of orientation in its large acceptation, and even the abstract notions of time and space are, according to these views, to be attributed, in their last analysis, to the fundamental, universal, simple sense of touch.

BACTERIOLOGY OF INFECTIONS OF THE URINARY TRACT.

The bacteriology of infections of the urinary tract is a rather new subject. Thomas R. Brown[3] makes a report of an investigation of this subject in women, which was made under exceptionally favorable conditions. Most of the acute cases were post-operative and the conditions surrounding the infection were carefully studied; careful cystoscopic examinations were made in all the chronic and most of the acute cases; and thirdly in all suspected renal infections the urine was obtained directly from the kidneys by ureteral catheterization. A brief summary is given of the more important findings as the complete paper will be published later. The cases of cystitis are divided into acute, chronic and tuberculous. The cases of acute cystitis are of great interest because in twenty-four of twenty-six the infection was post-operative, the urine having been examined bacteriologically immediately preceding the operation. These cases, therefore, throw needed light on the question which micro-organisms bring on infection. B. coli communis was found fifteen times, the white pus coccus five times, the yellow twice, the bacillus pyocyaneus, typhosus, and proteus vulgaris once each. In all these cases the urine was acid except the one due to B. proteus vulgaris. Catheterization is held responsible for the infection, although the procedure was carried out with great care. The usually low pathogenic power of these organisms emphasize the importance of other and accessory etiologic factors, the most important, according to Brown, being anemia, pressure on the bladder, sagging of the bladder, trauma and catheterization with poor technique.

Thirty-one cases of chronic cystitis were studied with approximately the same general results as in the series of acute cases. In 7 a pyelitis coexisted. There were 6 cases of tuberculous cystitis, the majority being asso-

2. L'Orientation, par le Dr. Pierre Bonnier. Scientia: Biologie, No. 9, Paris, April, 1900.

3. Johns Hopkins Hospital Bulletin, 1901, xii, 4.

ciated with tuberculous pyelitis or pyelonephritis. The urine was acid, usually rich in pus and red blood-cells.

The cases of pyelitis and pyelonephritis are of exceptional interest because the urine was obtained directly from the kidney, and usually from both kidneys, so that the two sides could be compared. The only two acute cases were secondary to vesical infection with B. coli. Twelve chronic cases were studied and 5 of these were evidently ascending ureteral infections. B. coli was present in 6 cases, B. proteus vulgaris in 3, and a white staphylococcus in 2, one case showing sterile urine. In the cases not due to B. coli, the urine was alkaline and in all a renal calculus of calcium and magnesium phosphates and carbonates was present. This shows in a striking manner the relation between infection and calculus formation. Six cases of tuberculous pyelitis and pyelonephritis were met with, all associated with the tubercle bacillus in pure culture.

These details are given to show the general trend of the results obtained by this interesting work. In the discussion, Dr. Young refers to dissimilarity of the results obtained by him in a similar study in the male. Young has found a much greater number of different bacteria and among them the gonococcus several times. Gonococcus infections of the bladder are more frequent in men than women, owing to the greater severity of gonococcal urethritis in the former. The ease with which the male bladder may be aspirated for cultures offers good opportunities for studying gonococcal and other vesical infections.

As pointed out by Welch, it would be a one-sided view which failed to take into consideration in the etiology of cystitis and pyelitis the non-bacterial factors, because the bacteria found in the urinary infections have ordinarily very limited pathogenic activity. Finally, it may be mentioned that Hunner refers to 3 cases of pelvic stone associated with streptococci.

Enough has been mentioned to indicate that observations are accumulating which will do much to clear up the various unsettled contentions in regard to infections of the urinary tract and to place our therapy on a safe basis.

THE BACHELOR'S DEGREE AND THE MEDICAL COLLEGE.

The question whether the bachelor's degree should be required for admission to professional schools was considered at a conference of educators recently held in Chicago, and was the special topic of an after-dinner speech by Prof. Ira Remsen of Johns Hopkins University. This problem, while seemingly simple, is in reality quite complex. As Professor Remsen said, there is a great difference between B. A. degrees, the difference depending largely on the college from which the degrees are obtained. A bachelor of arts from a really first-class institution has had, it may safely be asserted, a broader and a more complete training than has one who has obtained a similar degree from some ill-equipped school unfortunately dubbed a college and authorized to grant degrees, but which is little more than a high school or seminary.

If a bachelor's degree could have some definite meaning attached to it, by an agreement among the colleges and universities, as to requirements, it could be unhesitatingly accepted as proof of qualification for admission to the medical or other professional school.

There is, however, another point to be considered. With the liberty allowed a student in our first-class institutions, it is possible for a man to graduate without having taken those studies best fitted to enable him to pursue most advantageously his subsequent medical course. A student may have taken, as his elective studies, only French or mathematics, or astronomy, or geology, and yet be graduated *magna cum laude* with the bachelor's degree, and claim a right to enter the medical college. It is clear that he would be better fitted had he devoted some of his time to certain other branches, as biology, chemistry, botany, physics, etc. It follows that the faculty of the medical college has a right to ask those who apply for admission on the B. A. degree not only from what college they come, but what studies have been taken in order to secure the degree.

This leads to a consideration of the important topic of premedical courses in our literary colleges. Should not students who contemplate the study of medicine be early guided into courses especially adapted to prepare them for the medical college, into physics, chemistry, biology, with histologic technique, German and French studies that can be made to have a cultural influence as well as philosophy, Greek, or higher mathematics? And should not the student in a university in which the medical school is a part of that university receive credit in both the literary and the medical departments for certain work? This is already done to a certain extent at not a few universities, so that when a man takes his bachelor's degree in art or science, he has also credits in his medical course for one or even two years' work.

LEGISLATION ON HYPNOTISM.

A bill has been introduced in the New York legislature for regulating the practice of hypnotism, mesmerism, suggestive therapeutics, and allied phenomena. License is required from the Board of Regents of the University, and to obtain it a good general education and at least two years in a medical school are required. Any unauthorized practice or advertising of ability for such is to be made a misdemeanor, and penalties of fine and imprisonment are provided for by the act. In regulating the therapeutic and otherwise employment of hypnotism, New York State will have a precedent in the legislation or local ordinances of several European countries which have prohibited the unauthorized practice of inducing the hypnotic condition. Its possible dangers are sufficiently well known, moreover, to fully justify the proposed measure.

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ONTARIO'S VITAL STATISTICS.

The Registrar-General of the Province of Ontario recently published the complete returns of births, marriages and deaths, which are considered encouraging by the *Toronto Globe*, inasmuch as an increase of births is reported over the preceding year. The increase, however, is not great and still leaves the ratio lower than that of almost any other region of equal extent, viz., 19.9 per 1000, and less than that of 1898. It is to be presumed that vital statistics are kept more carefully in Canada than in some portions of the United States, but some of the small increase is attributed by the *Globe* to prosecutions of parents for neglecting to register the birth of offspring. Admitting a certain proportion of births not registered, the ratio is not encouraging, and the steady decrease of late years, only interrupted by the slight rise, is still less so. Even in the worst parts of the United States in this respect the birth-rate has not fallen so low as in Ontario. Though there, as elsewhere with a low birth-rate, the death-rate is still lower, the population would seem to be very nearly in a static condition, which from a political point of view is hardly a desirable one. The cause suggested by the Registrar, viz., the preponderance of the rural population, farm life not being conducive to early marriages, does not strike at the root of the matter. It would be better to assume an ideal of living generally above the universal possibilities, and this would apply as well to the town as to the rural population. The absence of a proletariat, while it indicates thrift and comfort, destroys the aggressiveness of a people and is a symptom to a certain extent of national decadence. Ontario seems, as far as this sign is indicative, to be approaching that condition.

OSTEOPLASTIC CARCINOMA.

In 1891 von Recklinghausen directed attention to the development of osseous metastases in primary carcinoma of the prostate gland. He showed that the metastases were associated with the new formation of bone. Since then several additional cases have been reported, and recently Erbslöh described five cases of osteoplastic carcinoma from von Recklinghausen's laboratory. Three cases occurred in men, the primary tumors being prostatic, and two in women, the carcinoma in one being primary in the stomach, in the other in the bile-ducts. In all these cases the carcinoma had a marked tendency to infiltration. The metastatic nodules in the bones contained newly-formed osseous substance. The microscopic appearances indicated that the metastatic growths began in the form of an intracapillary infiltration which resulted in closure of the capillaries and passive congestion, the latter being regarded as the determining cause of the new formation of bone. Side by side with the osteoplastic process may be resorptive processes, which render the bone soft and porous. As far as can be told at the present time, the spinal column is the most frequent seat of this interesting metastasis, then come the ribs, the proximal end of the femur, the pelvis, the skull, the sternum, the humerus, and the radius, in the order named. It seems as if the cells circulating in the blood were arrested in the wide and sluggish capillaries of the bones. The only other metastases in these cases—except in one—were situated in the regional lymph glands. This remarkable peculiarity of certain carcinomas, especially those developing in the prostate gland, should be borne in mind in the clinical study of prostatic tumors.

1. Virchow's Archiv, 1901, clxii, 20-44.

A TREATY OF SANITARY PROTECTION.

Two South American States, Argentina and Uruguay, have made, what is perhaps a novelty in diplomacy, a treaty of sanitary alliance and protection as regards infectious diseases, especially bubonic plague. It provides for mutual provisions for inspection and quarantine arrangements sufficient to protect either country from invasion of disease from the other without any undue interference with communications or commerce, such as might easily occur were the efforts made independently by either without regard to the actions of the other. Each country is to be in its way the guardian of the other's health as well as of its own, and to cordially co-operate in all necessary measures. The advantages of such a mutual arrangement carried out in good faith are obvious; it would be well could treatises in regard to sanitation become universal. A uniform system of notification and in and out inspection throughout the world, though like every other good thing it might find its opposers, would be a step toward the millenium. At present each leading government keeps its sanitary spies on the others in the way of consuls, etc., and our own government has a corps of medical officers stationed in various parts of the world to supplement its regular consular officials in their look-out for disease that might be transmitted to us. Probably this will always be more or less of a necessity, but such treaties as the one referred to are steps in advance that give encouragement of better things in the future. That it is between two Spanish-American countries is evidence that in medical matters, however it may be in general political management, they are progressive and enlightened. What they do for and between themselves in this direction will undoubtedly aid in the protection of other countries, which in fairness should reciprocate and co-operate in the good work. Sanitary alliances are apparently a new thing in international law; they are unmentioned in most if not all text-books on the subject, but they are an innovation that is to be commended and it is to be hoped has come to stay.

PRACTICE ACTS AND RELIGIOUS LIBERTY.

The argument that medical practice acts interfere with religious liberty guaranteed by the constitution is an old one, but it still seems to be in use. The spiritualists and "Christian Science" people always make the most of it, and it does not appear to relieve the case much for them when, as in the Missouri law just passed by the legislature, they are allowed to practice provided they make no charges for their services. The remuneration is the important feature of the religious liberty of which the law deprives them; their religion, in its essentials, is like that of the sailor who, when in extremity, not knowing how to pray, preach or sing, passed the hat for a collection. The opposition to the

Missouri bill, however, as well as to a similar act just passed by the Indiana legislature, appears from an unexpected source; it is said that Catholic influence has been exerted against the medical practice act in those states. We have too good an opinion of the general good sense of the higher authorities and leaders in the Catholic or any of the Protestant churches to believe that they are at all responsible for such an action; it must be, if the reports are true, only a misled zeal of some of their more poorly informed adherents. "Christian Science," so far as its misty theology can be interpreted, involves the nullification of human responsibility and thus strikes at the basis of all religion. It is, as has often been said, neither Christian nor scientific, and is therefore without any claims for consideration on either side. Religious rites for the sick, as they are practiced in the Catholic church, are, as is generally understood, for the good of the soul, and therefore do not come properly under the prohibitions of the legal regulation of medical practice. The Catholic church does not teach dependence upon them to the exclusion of other measures, or that they are alone directly efficacious for bodily ills. That Catholics, therefore, should oppose medical laws, is not to be expected, and if they do so it must be attributed to individual ignorance, not to the church as a whole.

HAYCRAFT'S REACTION FOR BILE.

When sublimed sulphur—"flour, or flowers, of sulphur"—is added to urine containing bile, the sulphur immediately falls to the bottom of the tube. In the absence of bile the sulphur remains on the surface of the urine, sinking but partially or very slowly, if at all. This is Haycraft's reaction for biliary acids. This simple method, known to Eichhorst in 1887 and mentioned in the Physiology of Langlois and de Varigny in 1893, seems to have fallen into complete oblivion. The original publication of Haycraft, an English chemist, has been searched for in vain by Frenkel and Cluzet who, attracted by the interesting physical problems involved in the reaction and by its practical value, have studied the phenomenon both clinically and experimentally.[1] They find that Haycraft's reaction for biliary acids is an extremely simple method for determining the presence of bile in the urine and in certain other organic liquids. Its sensitiveness compares favorably with that of Pettenkofer's method and of Strassburg's modification of the latter, but it is not absolutely pathognomonic; for there are a number of other substances which also cause the sulphur to precipitate, such as acetic acid, alcohol, ether, chloroform, essence of turpentine, benzoin and its derivatives, phenol and its derivatives, anilin, and the soaps. In the case of urine, however, Haycraft's method is of great usefulness for the very reason that the substances just enumerated occur but exceptionally in the urine, and hence only rarely will they simulate the presence of the biliary acids. Frenkel and Cluzet state that Gmelin's test and Pettenkofer's and Strassburg's reactions may fail to indicate bile where sulphur gives a positive result. In the case of the contents of the stomach or of the intestines, the reaction with sulphur has not so much value because of the frequent presence of acetic acid, alcohol, and phenol and its derivatives, all of which throw down the sulphur.

Haycraft's reaction is explained by differences in surface tension. The authors have determined that all fluids with a surface tension greater than 50 dynes per centimeter do not allow sulphur to fall, and that in all fluids with a tension less than 50 dynes the sulphur rapidly settles. When the tension is about 50 dynes, the reaction is doubtful. Incidentally they observed that lycopodium bears the same relations to fluids with a tension of 30 dynes, as flowers of sulphur to fluids with a tension of 50.

1. Jour. de Phys. et Path. gén., 1901, iii, 99-111.

A THEORY OF RELAPSES IN FEVERS.

In certain disease, such as typhoid fever, antibacterial substances, often in considerable quantity, appear in the blood toward the end of the fever and in convalescence. It is not unlikely that these substances begin to be formed soon after infection. The appearances of other substances, such as agglutinins, indicate that specific changes are taking place in the tissues and fluids of the affected organism. That relapses should occur, as they frequently do, in individuals whose blood contains substances inimical to the specific bacterium of the disease in question is certainly at first sight not clear. This question is discussed by Herbert E. Durham.[1] He bases his theory of relapse in fevers upon the consideration that a given infection is not to be regarded as the result of the action of a number of actually identical organisms, but rather as the result of the combined action of closely similar though not absolutely identical agents. Now, if the infecting agents consist of varieties and subvarieties, then the resulting antibodies in the serum may vary more or less in their general constitution corresponding to the varieties and subvarieties of the micro-organisms at work. The individual may become highly protected against a particular variety of pathogenic agent, whereas other varieties may multiply quite unchecked and thus cause a relapse. Is this refinement of bacterial variability a mere creation of fancy or does it rest upon actual observations? Durham thinks that such varieties as here supposed have been shown to exist. Pfeiffer and Kolle have found that the protective power of typhoid serum varies with different test cultures, and not only quantitatively but also qualitatively. There are also marked differences in the reaction of agglutination in different races of bacilli and different samples of serum. In studying different colonies of B. enteritidis (Gärtner) obtained from a fatal case of meat poisoning, Durham found that the bacilli in one colony were peculiarly aberrant in their behavior toward the serum from some of the individuals who had suffered from the poisoning. And two of the serum samples, which agglutinated the atypical bacillus, had comparatively less effect upon the other cultures. This points to a "varietally different" infection to that of the other patients. The aberrant culture was not more virulent than the other cultures. The problem ought to be studied by means of tests of the actual conditions in relapses in such disease as typhoid fever. Serum should be tested, as suggested by Durham, before, dur-

1. Jour. of Path. and Bact., 1901, vii, 241-249.

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ing and after relapses, upon a varied selection of cultures, both for agglutinating and protective powers. The literature of antistreptococcic serum contains much evidence confirmatory of the view advanced by Durham. Van der Velde has shown that the serum of a streptococcus-treated animal contains pronounced protective powers against a particular race of streptococci, but not against other races. Clinical experience shows that erysipelas is very likely to recur, and perhaps the renewed outbreaks are caused by streptococci that differ somewhat in character from the streptococci of the original attack. There is consequently considerable evidence to indicate that relapses may depend upon the varying preponderance of varietal forms, each capable by virtue of its complex structure to cause more or less specific antibodies. There are so many factors in the pathology of an infective disease that it is exceedingly difficult to determine the part of each in the final result. Bacterial variability seems to be competent to clear up some of the difficulties in the way of a clear understanding of relapses in fever.

Medical News.

ALABAMA.

West Huntsville has closed its smallpox hospital, as no new cases have developed in the last three weeks.

Dr. Thomas W. Ayers, wife and family left Anniston, March 9, and sailed from San Francisco, March 15, for China, where Dr. Ayers is to be stationed as a medical missionary.

Two Birmingham physicians have been fined $1 each for violating the city ordinance by failing to notify the city physician and county health officer, at once, on finding a case of contagious disease.

Hillman Hospital, Birmingham, received an addition of more than $6000 to its building fund in response to appeals made at a recent mass meeting. The assets of the hospital now exceed $31,000, not including a maintenance fund of $20,000, presented by Mr. Hillman.

CALIFORNIA.

A detention hospital for contagious diseases is said to be the most pressing need of Los Angeles, and the board of health has been petitioned to take steps to establish such an institution.

A "nervopathist," of Los Angeles, who was fined $100 a short time ago for practicing medicine without a license, and who appealed, has had the judgment of the lower court affirmed by the supreme court.

A leper, who had been selling candy in San Francisco since November, was taken from his place of business March 12 and admitted to the Harbor Hospital, whence he will be taken to the hospital for lepers.

The German Hospital, San Francisco, has invited architects to present competitive designs for the new hospital building, on which $250,000 is to be expended. Prizes of $2000, $1000, $750 and $500, respectively, are offered for the four best designs.

Seven graduates of the Pacific Coast Regular College of Medicine, comprising the first graduating class of that institution, which began its work only about nine months ago, have been refused licenses to practice by the board of medical examiners of the Medical Society of the State of California, on the ground that their Alma Mater does not meet with the minimum requirements for medical colleges, as adopted by the board Dec. 4, 1900.

COLORADO.

Dr. Uhler D. McDowell, Longmont, has been appointed medical inspector to the State Board of Health.

Lake City is to have a hospital, through the generosity of Col. C. F. Meek, who has purchased a suitable building and turned it over to the people of Hinsdale County for hospital purposes.

A compromise has been effected regarding the Denver & Rio Grande Railroad Hospital at Salida which is satisfactory alike to the officials and the employees of the railroad. By its provisions Dr. Frank N. Cochems is made surgeon-in-charge, with authority only limited by the trustees of the employees relief association.

An antivaccination circular is being distributed by the Colorado Medical Liberty League, signed by two "doctors," one of whom is a magnetic healer and the other is not known to the medical directory. Unfortunately, however, this propaganda makes the enforcement of the orders of the health commissioner regarding vaccination more difficult.

ILLINOIS.

St. Anthony's Hospital, Rock Island, held the annual meeting of its surgical staff, March 8, and re-elected Dr. George L. Eyster, president; Dr. Joseph R. Hollowbush, vice-president, and Dr. St. Elmo M. Sala, secretary and treasurer.

Chicago.

Dr. E. C. Dudley is taking a vacation tour on the Pacific coast.

Dr. Frank Billings has returned from a yachting trip of a month in the tropics.

"Dr." Gee Wo Chan, a Chinaman, has been prosecuted by the State Board of Health for omitting to comply with the formalities required by law before practicing medicine.

Dr. Gerry S. Driver, acting asst.-surgeon, U. S. Army, who has been stationed at Chicago for some time, has been made captain and asst.-surgeon of Volunteers, and ordered to the Philippine Islands.

Pneumonia Mortality.—The enormous increase of pneumonia mortality within the past decade is due to the fatal complications of influenza, the germ of which disease has been present in this city to a greater or lesser extent ever since 1890. The sufferer from pneumonia now has a much poorer chance of recovery than he would have had a dozen years ago, when there was no influenza infection in the air.

Chicago's Mortality.—The mortality last week was lower than for the week previous, and restores the average of eight weeks of unprecedentedly low winter mortality. There were 443 deaths from all causes, 35 fewer than the previous week and 104 less than the corresponding week of 1900. The death-rate was 13.14 per 1000 per annum for the week ended March 16. Of the 443 deaths, 104 were of infants under 1 year old and 88 of individuals over 60. Respiratory diseases caused 167 deaths and violence 24. On the basis of the first sixteen days of the month, the total March mortality will be only 1910, as against 2547 in 1900, 2343 in 1899, and 2316 in 1898. Taking the increase of population into consideration, this will make a remarkable showing for March, 1901. The most satisfactory and the most unlooked-for decrease is in the deaths from pneumonia, which were 13 less than the previous week and 48 fewer than in the corresponding week one year ago. The total pneumonia deaths for the month, up to the close of last week, number 161, on which basis the total for the month would be 328, as against 564 in 1900, 468 in 1899, and 378 in 1898.

INDIANA.

Riley has an epidemic of measles. One physician in the town reported 83 cases to the County Board of Health in February.

Dr. John A. Martin, for several years asst.-surgeon at the State Soldiers' Home, Lafayette, has been made surgeon-in-charge, vice Dr. Theodore Sargent, who resigned on account of ill health, but who will remain at the home as assistant-surgeon.

IOWA.

Cedar Rapids is to have a public hospital. Abraham Slimmer, of Waverly, has agreed to duplicate, up to $50,000, any amount the city may raise for this purpose. About $25,000 has been secured up to this time.

LOUISIANA.

Dr. Joseph A. O'Hara, New Orleans, has been appointed medical inspector of public school children by the local board of health.

Dr. D. U. Maes has been appointed assistant-demonstrator of anatomy, New Orleans College of Dentistry, vice Dr. Emil Regard, resigned.

The annex to the State Insane Hospital, for colored patients, has been constructed at a cost of $18,000, and on the day it was opened fifteen patients were received.

The State Board of Health has appointed Drs. David P Albers, William H. Carson, W. S. Cushman, J. E. Heidingsfelder, G. King Logan, and W. J. Rhymes medical inspectors on the fruit vessels plying between New Orleans and Central American ports.

Appointments as Internes.—On competitive examination, the following undergraduates of the medical department of Tulane University have been chosen to serve as internes in the Charity Hospital for two years from April 1: W. R. Callen, P. C. De Verges, A. C. Eustis, E. M. Hummel, A. C. Jacoby, R. C. Lynch, J. F. Points, and S. K. Simon.

Tuberculosis Camps.—There is a movement on foot to establish hospital camps for the tuberculous in the pine woods near Covington, St. Taminary Parish. Already a fifty-acre tract of land and $800 have been donated for the purpose, $300 of the latter having been given by members of the State Board of Health.

MARYLAND.

Smallpox.—Early in March a report came to the State Board of Health of the prevalence of an outbreak of supposed chicken-pox in Sussex County, Delaware, which borders on Maryland. A case was found on board a vessel in the harbor of Cambridge, Md., which was diagnosed by Drs. Mace and Goldsborough, of that place, as smallpox. Dr. John S. Fulton at once warned all county health officers of the Eastern shore, and also notified the Delaware officials of the discovery. It was then found that there were fifty or sixty cases, chiefly among negroes, at Seaford, Del. The disease is said to be of a mild type.

Baltimore.

Dr. Bosley, health commissioner, has had introduced into the city council an ordinance appropriating $25,000 for an infectious diseases hospital.

MICHIGAN.

Smallpox in Flint has assumed alarming proportions. Many cases have been reported, more than 100 are in quarantine, and this within ten days. All business is at a standstill.

Dr. Henry D. Thomason, Albion, who served during the Spanish-American War as maior and surgeon of Volunteers in the South, Cuba and the Philippines, and returned to the United States a few months ago, has been re-appointed major and surgeon, U. S. V., and is on his way to his post of duty in Manila.

The State Mortality.—For February this was at the rate of 17.1 per 1000 per annum. There were 472 more deaths than in the corresponding month of 1900. There were 536 deaths of infants under 1 year of age, 185 of children 1 to 4 years old, and 1029 of persons 65 years and over. Important causes of death were as follows: Tuberculosis, 184; typhoid fever, 43; diphtheria and croup, 47; scarlet fever, 34; pneumonia, 474; influenza, 378; cancer, 121; violence, 100.

Hospital for Consumptives.—A bill has been introduced in the legislature, by Dr. Ames, to establish and maintain a state hospital for consumptives. It provides that the objects of the hospital shall be the proper care and treatment of consumptives; the training and education of those who leave the hospital in the restriction of the spread of the disease; the training of medical students in the methods of restricting tuberculous disease, and that physicians and others may be enabled to study the disease with a view to its restriction or extinction in Michigan.

MINNESOTA.

Bethesda Hospital, St. Paul, has paid off $20,000 of its indebtedness, leaving only $5000 outstanding.

Both medical bills, previously noticed in these columns, were defeated in the legislature, after long and fruitless debate, by a vote striking out the enacting clause of each.

A bill has been introduced by which the state hospitals for the insane are to be designated, not as "first" and "second," but by the name of the city in which they are located. The bill also provides for $200,000 to be used for the construction of two cottages at Anoka and two at Hastings.

NEW JERSEY.

Many physicians from various parts of the state gathered at Trenton to urge the appropriation of funds for the construction of a sanitorium for consumptives.

The State Hospital at Morristown is at last completed, at a cost of $500,000, or more than $5000 per bed. The formal opening will be deferred until later in the spring.

Smallpox has appeared in Hudson County, and at Mount Laurel. General vaccination has been recommended in the latter place, and in Paterson. The quarantine has been raised against certain districts of Woodbury, where smallpox has prevailed.

Regulation of Anatomy Courses.—A bill has been introduced in the house prohibiting any institution that gives instruction in human anatomy from graduating pupils in less than two years. It was referred to a committee and promptly reported with a favorable recommendation for its passage. The bill is aimed at a school in Trenton which advertises to teach its system of curing without drugs in ten months. Because it does not prescribe drugs in any way the school is exempt from examination by the State Board of Medical Examiners.

NEW YORK.

Dr. Ethan A. Nevin, Ogdensburg, has been appointed junior physician at the Long Island State Hospital.

The Amsterdam City Hospital staff met March 5 and elected Dr. Charles Storer consulting physician. Dr. James B. Conant was nominated on the staff, and Dr. Edward J. Collier appointed pathologist.

The bill giving the State Board of Health power to regulate the type and leading of books, newspapers and serial literature, to protect the public eyesight, has been reported favorably by the public health committee of the assembly.

Medical Examiners.—The following were appointed by the board of regents, at its meeting in Albany, March 14: Drs. Joseph P. Creveling, Auburn, and Eugene Beach, Gloversville; Drs. W. Gilman Thompson, Cornell Medical School, and Willis G. Tucker, Albany Medical School, were appointed members of the medical council for three and five years, respectively.

Buffalo.

Dr. Charles M. Burdick has been appointed medical interne in the St. Lawrence State Hospital.

The monthly report of the department of health for February shows a death-rate of 13.43 per 1000 per annum.

New York City.

A New Hospital.—The Hebrew Benevolent and Orphan Asylum Society will build a five-story hospital at the northeast corner of Amsterdam avenue and 136th street. It will adjoin the present building and will cost $70,000.

A Brooklyn policeman, exposed as a guard in a tenement district where quite a number of smallpox cases had appeared, has been sent to North Brother Island suffering from the disease. Other cases have appeared in Brooklyn.

A Projected Nurses' Home.—On March 11 plans were filed for the new nurses' home for the Presbyterian Hospital, to occupy a plot 124 by 102 feet on a site opposite the hospital. The structure is to be eight stories, paid for from a fund of $300,000 provided by the munificence of John Stewart Kennedy, president of the board of managers.

OHIO.

Dr. Homer C. Bennett, Lima, suffered a loss of about $1000 by fire, March 12.

Township physicians have been appointed as follows: Drs. Edward A. Flinn, Madisonville, and Ulysses G. Senour, Pleasant Ridge.

Dr. James F. Edwards, formerly of Portsmouth, but now an acting assistant-surgeon on duty with the 32d Regiment, U. S. V., in the Philippines, has been commended for conspicuous gallantry on the field of battle and recommended for promotion.

Lakeside Hospital, Cleveland, has selected the following house staff from the graduating class of Western Reserve Medical College: A. H. Bill and C. B. Wean, medical service; P. P. Carlisle, C. H. Hay, A. C. Ludlow and L. B. Zintsmaster, surgical; C. S. Hoover and D. W. Pepper, gynecology, and E. M. Ickles, private ward.

Meat Regulation.—Health Officer C. W. Davis, Cincinnati, has transmitted to the board of public service an ordinance providing that no person shall expose for sale any sheep, goat, lamb or kid that has been slaughtered, until the head, feet, etc., have been removed. The statement is made that meat from which the head, feet, etc., are not removed is liable to contain "germs and vermin."

St. Joseph's Hospital, Lorain, has organized its medical staff as follows: Dr. Abraham N. Garver, president; Dr. Olney B. Monosmith, secretary; Drs. William E. Wheatley,

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Samuel S. Cox, John F. McGarvey and Abraham N. Garver, on the surgical staff; Drs. Edward V. Hug, Charles H. Frederick, Frank Young, John R. Gilbert and H. P. Robinson, on the medical staff, and Drs. Olney B. Monosmith, Lorain, and H. Wooster Patrick, Elyria, in the eye, ear, nose and throat department.

PENNSYLVANIA.

Dr. J. Ralph Shook, Greencastle, has received an appointment as acting assistant-surgeon in the army.

Dr. Andrew Strang, for many years resident physician at Hillside Home, Scranton, has resigned and will spend several months abroad.

The State Hospital for the Insane at Norristown is so overcrowded, despite the two new buildings, that on March 1 260 patients were sleeping in corridors, 150 of whom had only mattresses on the floor.

The legislature has been asked for an appropriation of $60,000 for the establishment of free homes for consumptives in the mountains near White Haven. The idea at present is to erect about ten cottages where these patients may be treated.

The will of Christopher L. Magee, of Pittsburg, provides for the founding of a general hospital, to be known as the Steel-Magee Hospital, in honor of the testator's mother. The interest on $10,000 was also given to Mercy Hospital, of Pittsburg.

Fire in Hospital.—On March 11 a fire occurred in the Beaver County Hospital, at Rochester, and destroyed the first floor of the building. The hospital was completed last July, at a cost of $4000. The total loss will aggregate $3000. The patients were transferred to the Beaver Valley Hospital at New Brighton.

Warrants have been issued by Coroner Roberts, of Scranton, for the arrest of four "Christian Scientists" for alleged criminal negligence in the case of a man who recently died there while under their treatment. One of the accused is said to have received $1 a day for his services, and as he has no license to practice medicine, may be prosecuted.

Philadelphia.

Gifts.—By the will of George M. Troutman, $5000 has been given the Presbyterian Hospital for the endowment of a free bed; $1000 to the Maternity Hospital of Philadelphia, $1000 to the Northern Dispensary of Philadelphia, and $5000 to the Philadelphia Home for Incurables.

Hospital Funds.—The recent charity ball realized $11,200, which was equally divided between the University of Pennsylvania Hospital, the Maternity Hospital of the Jefferson Medical College, the Orthopedic Hospital and Infirmary for Nervous Diseases, and the Samaritan Hospital.

Free Hospital for Poor Consumptives.—This institution has announced that the total receipts for the year were $10,237.65, and the expenditures $10,048.27. The sum of $3327.14 was received through small contribution boxes placed in different portions of the city. The board of managers has purchased 215 acres of land in the Pocono Mountains, on which to erect a sanitarium. At the present time the patients are being treated in the University, German, St. Agnes', Rush and St. Mary's hospitals. It is hoped that the management will soon be able to erect a building of its own in the city. Dr. Lawrence F. Flick was re-elected president.

Tuberculosis Contagious.—The board of health has placed tuberculosis on the list of contagious diseases, and decreed that physicians treating such cases must report them. It is not the intention to isolate cases of tuberculosis, or to placard their houses. The work of the board will be educational, and will consist in sending to these patients instructions regarding certain precautionary measures to be instituted in order to prevent others from contracting the disease, and in other instances to supply patients dependent on charity with the required medicines. This work, for the most part, has resulted from the efforts of members of the Pennsylvania Society for the Prevention of Tuberculosis and the Philadelphia County Medical Society.

SOUTH DAKOTA.

Dr. Frederick W. Cox, Vermillion, has been appointed acting assistant-surgeon in the army.

The plans and specifications for St. Luke's Hospital building, Aberdeen, have been received and the construction of the hospital will be started in a few weeks.

The bill introduced by Dr. Charles W. Locke, of Minnehaha County, provides that no license shall be issued to any person who has not taken a full four-year course in a recognized medical college.

UTAH.

Smallpox is reported as follows: Salt Lake City, 112 cases, including 56 new cases; Sterling, 1; Eureka and Letitia, each 2 cases.

Dr. Joseph M. Heller, Winchester, late acting assistant surgeon in the army, has been appointed major and surgeon of volunteers, on the recommendation of General Otis.

Gunnison children were admitted to school unvaccinated in violation of orders of the State Board of Health, and the health officer, Dr. Hubert F. Andrews, has been instructed to prosecute the persons on whom the responsibility can be fixed.

CANADA.

Montreal's mortality record for the nine weeks following January 5 shows 129 deaths from scarlet fever. During the same time diphtheria only claimed 13.

Smallpox cases now number 136 in the province of Ontario. On March 1 there were 87. The number of cases at Sudbury has increased from 17 to 30.

Dr. Walter Wilkins, one of the resident staff of the Montreal General Hospital, has left for British Columbia, to accept an appointment as surgeon of the Cariboo mines.

An epidemic of scarlet fever is raging in the Baptist college at Woodstock, Ont. There are several hundred students at this institution, and the college is under strict quarantine.

Prof. J. George Adami, of McGill University, Montreal, has been appointed vice-president of the section of pathology and bacteriology of the International Congress on Tuberculosis, to be held in London, England, in July, under the patronage of His Majesty, King Edward VII.

Sanitary Legislation.—A deputation from the National Sanitarium Association waited on the local government recently, seeking an amendment to the sanitarium act, which will allow municipalities to contribute to the support of sanitaria outside the municipalities. If the act were so amended the association would immediately commence the erection of a sanitarium outside of Toronto.

Registration of Births and Deaths Opposed.—The Doukhobors and Gallicians, settled in the Northwest Territories, are commencing to make trouble in the community. They first objected to Canadian marriage laws, and now they are opposing the law in regard to the registration of births and deaths. They have issued "An Address to All Nations," seeking an asylum in a country where these "oppressive laws" do not obtain.

Victorian Order of Nurses.—The annual meeting of the Victorian Order of Nurses was held at Ottawa on March 15. The total receipts for the year amounted to $7638.53, and the expenditure was $5668.76. The Ontario government grants amounted to $2500. Six new branches were supplied with nurses during the year. Since the inauguration of the order, five cottage hospitals have been established in British Columbia and the Northwest Territories. A fund will be established for creating such hospitals, and it is proposed to invite the dominion and provincial governments for contributions for this purpose.

Dominion Medical Council.—On the 13th inst., Dr. T. G. Roddick, M.P., introduced his bill for a dominion medical council into the dominion parliament. In his address to the house, he explained the provisions of the bill, the details of which have already been published in THE JOURNAL. In going over the constitution of the board, Dr. Roddick gave a concise history of the repeated attempts to form this council. Each province will be given three members and the homeopaths will also have three representatives. Dr. Roddick gives the medical population of the provinces as follows: Prince Edward Island, 90 practitioners; Nova Scotia, 476; New Brunswick, 243; Quebec, 1400; Ontario, 2500; Manitoba, 344; British Columbia, 314; Northwest Territories, 95. The bill received its first reading.

Scientific Evenings.—Toronto University has inaugurated an annual series of scientific evenings, to afford the public an opportunity to become acquainted with the scientific resources of the university. In the physiological department, Prof. A. B. MacCallum and Dr. F. H. Scott exhibited the tracings from the external pulsations of the heart and blood-vessels of the human subject at the session held March 13. Dr. Miller and Dr. Kendrick, of the chemical department, showed experiments illustrating Goldschmidt's method of producing intense heat

by the action of aluminum on oxid of iron. Prof. A. Primrose and Dr. Coutts gave a demonstration of the filaria parasite. One was exhibited in the living state, the filaria sanguinis hominis nocturna. Demonstrations were also given in the laboratories on radiographic experiments, microtomy and bacteriology.

Healthy Baking-Powder.—A deputation of the baking-powder men waited on the central government last week. They were accompanied by Dr. Peter T. Austin, a New York chemist, while the Inland Revenue Department was advised by its analysts, Messrs. T. MacFarlane and A. McGill. In a bulletin issued some months ago, noted in THE JOURNAL at the time, the employment of alum in baking-powders was condemned as being injurious to health. The contentions of the deputation were that whenever alum is used in making baking-powder it is mixed with bicarbonate of soda and, during the process of baking, goes off in the form of carbonic acid gas, and the residue left is not injurious to health. While a prohibitory law might be justified in England, where they employ a crude alum, it does not maintain in Canada, where the product goes into the manufacture. The deputation was promised a consideration of the question.

FOREIGN.

Dr. Henry Jellett, ex-assistant master of Retunda Hospital, Dublin, has been appointed editor of the *Medical Press and Circular,* to succeed the late Dr. Archibald Hamilton Jacob.

Snake-bites, according to the last annual report of the Indian Government, caused 24,621 deaths in India last year. The mortality from this cause does not seem to diminish in spite of all efforts of the government.

Deaths Abroad.—The death of G. A. Nordlund, professor of anatomy at Upsala, is announced, and that of C. J. Rossander, professor of surgery at Stockholm; of O. von Heusinger, professor of legal medicine and pediatrics at Marburg, and of J. Homan, assistant superintendent of the Kiel Institute of Hygiene.

Death of the Editor of "Vratch."—Prof. V. Manassein, who founded the leading Russian medical weekly, *Vratch,* twenty-one years ago, and has been its editor since, died at St. Petersburg, February 26, of apoplexy. He was in his sixty-first year. He served as professor of therapeutics and internal medicine for twenty-five years, and has published a number of important works.

Progress of the Plague.—According to the *British Medical Journal* of March 9, deaths from plague, for all India, for the week preceding February 9 numbered 4377, as compared with 3415 the previous week. For the week ending February 12, 923 died of plague in the City of Bombay, or 137 more than the preceding week. Since January 4, 5 Europeans have been attacked by the disease in Bombay. The deaths from this cause in Bengal for the week ending February 9, numbered 2491, the greatest mortality being at Patna, i. e., 1408. In Calcutta there were 129 deaths during this period, and on February 10, 11, 12, 13 and 14, they numbered respectively 17, 16, 30, 35 and 30. The deaths in Mysore, which is the only province in India in which the plague is not increasing, numbered 226 for the week ending February 9. In Mauritius 16 new cases occured during the week ending February 21, with 13 deaths. Cablegrams announce that 3 cases were reported in Singapore on February 22 and 24, and 1 case at Port Adelaide, Australia, on a transport which arrived from Cape Town, March 2. Reports also indicate 2 cases near Brisbane, Australia. Cablegrams of March 14 announce that 4 cases of the disease among Europeans have been officially reported in Cape Town, S. A., and 8 more among colored people, with 37 deaths to that date. The outbreak of plague at Cape Town threatens to become serious. The government is taking from the corporation full control of the measures for combating the disease and is engaging a large number of inspectors and scavengers to cleanse every quarter of the city and destroy rats and vermin. Professor Simpson, the plague expert; Dr. Gregory, the government health officer, and Dr. Fuller, the city health officer, will act as joint advisers in the treatment of the outbreak. Systematic cleansing of all houses has been begun. The city has been divided into districts, each in charge of a doctor assisted by a sanitary staff. For the natives, a location is being prepared, to which they will be removed from their hovels, the latter being cleansed or destroyed.

LONDON.

The Royal Commission on Arsenical Poisoning.

Under the presidency of Lord Kelvin, the royal commission appointed to investigate the amount of recent exceptional sickness and death due to arsenical poisoning, the extent to which this was due to the presence of arsenic in beer or other articles of food or drinks, and how such poisoning can be prevented in the future, has commenced its sittings in London. Most of the evidence given up to the present has been previously reported in THE JOURNAL. Dr. Tattersall, medical officer of health of Salford, an important town with a population of 222,000, near Manchester, described the outbreak there. The facts are exactly parallel to those of the Manchester outbreak. In June, 1900, a great increase was observed in the number of cases of peripheral neuritis, and in November a still further increase. All the sufferers were beer drinkers and took from 1 to 16 pints of beer daily. Lead poisoning was suspected, but analysis of samples of beer taken from fourteen breweries were negative. Dr. Reynolds' discovery of arsenic in the beer of Manchester revealed the cause of the peripheral neuritis; 996 cases were reported, and there were 107 deaths, probably due to arsenical poisoning. The outbreak lasted from June to the end of November. Moderate drinkers took about half a grain of arsenic weekly; in some cases as much as 4 grains was taken.

Intestinal Sand.

At the Royal Medical and Chirurgical Society, Sir Dyce Duckworth and Dr. A. Garrod related a case of this condition, which has been rarely recorded in England as compared with the Continent. A married woman, aged 33, lived in healthy surroundings, save for the supply of water, which was hard and contained organic impurities. The family history showed a gouty stock. In January, 1900, the illness commenced with intractable diarrhea, accompanied by internal rumbling and purring noises, there being six or eight loose motions in each twenty-four hours. In February the patient took to her bed and was ordered an exclusively milk diet and lime-water. This lessened the diarrhea to three or four motions daily, sometimes attended with the passage of mucus. In March sand was discovered in the motions and it was found subsequently in all in which it was looked for. Early in May she was pallid and sparely nourished. On examining the abdomen the colon and sigmoid flexure were found empty, too readily palpable and apparently thickened. The right kidney was movable. The temperature occasionally rose to 100 F. The sand was reddish-brown, finely gritty, and much resembled a deposit of uric acid. The patient was confined to bed and kept on a milk diet. Salicylate of bismuth and bicarbonate were given and the diarrhea was checked and health improved. All vegetable food was withheld and digestion found to be much more comfortable without it, as it caused immediate distension. In November the patient was rather pallid, but had regained her weight and the bowel no longer appeared thickened, but the splenic flexure was tender. There was still looseness of the bowel, from two to four actions occurring daily, but no sand was passed.

This case presents some of the characteristics which have been described in the few instances of the disorder on record. But it is remarkable in the slightness of the pain. In most cases paroxysmal pains lasting several hours were a characteristic feature. When washed and dried in the air the gritty material passed with the motions had the appearance of fine sand. It was deep brown, with an admixture of pale particles. Under a low power of the microscope the granules were seen to be of a great variety of shapes; some were roughly oval, some oblong or rod-like, others irregular. Their color varied from yellow to brown. The air-dried sand was composed of water, 12.4; organic matter, 26.2, and inorganic, 61.3 per cent. Analysis showed that the inorganic matter was composed of CaO 54.9, P_2O_5 42.5, CO_2 2.2, and traces of Mg. and Fe.

Extensive Enterectomy.

Mr. A. E. Barker described the case of a feeble old woman, aged 76, admitted to the hospital. In 1870 she had undergone ovariotomy. For two years she had a large ventral hernia in the scar. On January 8 and 9 she had not felt well, and complained of some pain in the abdomen, but was not sick. On January 10 she was seized with severe pain in the abdomen and vomited. The hernial tumor was tender and more swollen than usual. No motion or flatus was passed. Mr. Barker opened the abdomen through the old scar, and about a pint of dirty, blood-stained fluid, with a fishy odor, gushed out. A loop of blackened small

intestine, about three feet long, was found strangulated through the omentum. The gut had not entirely lost its luster, but was very foul and distended tightly with dark blood-stained fluid. Subperitoneal hemorrhages existed in several places and a few of the subperitoneal venules were thrombosed. The extremely foul and fishy odor of the gut determined Mr. Barker to remove it, as its recovery seemed hopeless. He therefore cut away 5½ feet of the bowel and anastomosed end-to-end as rapidly as possible .This part of the operation occupied forty-four minutes, the whole of the operation sixty-three. During this twelve ounces of normal saline solution were injected subcutaneously. Recovery was uninterrupted.

Painless Pyonephrosis Without Fever.

At the Medical Society of London, Mr. Alban Doran brought forward this case because, though painless calculous pyonephrosis is not unknown, surgeons are often induced, in a case of enlarged kidney, to exclude calculous pyonephrosis on the ground that the disease must always be painful. A woman, aged 38, had borne eight children, the youngest of whom was 5½ years. Her husband had been subject to stricture and cystitis. For a few months she had a purulent vaginal discharge. For a year she had noticed a swelling in the left side; it ached when she put on her stays, but when undressed she was always comfortable. There was no history of rigors, fever, hematuria or renal colic. A large movable kidney lay in the right groin; it was not tender. The urine occasionally contained albumin. The kidney was exposed by Langenbeck's incision and easily extracted. It had become a cyst containing about a pint of "laudable pus," without a trace of tubercle. The lower calyces were blocked by a small rough calculus. The infection was probably gonococcic. The absence of fever was remarkable. The kidney was converted into a bag of pus and yet the patient appeared in excellent health.

Correspondence.

The Physician and Commercialism.

CHICAGO, March 1, 1901.

To the Editor:—The recent commendable action of the Chicago Medical Society (THE JOURNAL, February 2, p. 331) in so emphatically taking a stand against the much discussed division of specialist's fees, is to be, the writer trusts, only the first move toward a more thorough and rigid ethical introspection. For it is only by such decisive action that every member of the profession can be made to appreciate how insidious and dangerous has been the progress of commercialism in medicine.

Recent stock in a mineral springs company has been offered to—and, indeed, purchased by—some of our leading physicians at a very advantageous price. It being explained to the physician visited, by the solicitor for the company, that the water is practically pure—there is no doubt the spring furnishes good water—that he can without hesitation recommend it to his patients, that the sale of the water is to depend upon physicians' and druggists' recommendations entirely, there being a definite profit on every gallon sold, he (the physician) can by each and every prescription increase the earnings on the stock he holds; indeed, from a businessman's standpoint the proposition is a very attractive one, and it is being conducted upon such conservative lines that very few physicians who have subscribed for stock realize how questionable is the transaction from the ethical standpoint. To all questions there are two sides, and this is not an exception. Wherever pure water is difficult to obtain it can be seen that the patient would be better served by physicians combining, and, if necessary, purchasing a pure spring and recommending its waters, but in such a case it would be a satisfaction to the physician to explain to his patients his connection with the company and his reasons for such connection; the patient's confidence in the physician would thus be strengthened and not weakened, and the medical adviser would thus guard his patient from possible water-supply impositions and be in no danger of embarrassments consequent upon an unexpected disclosure to the patient of his (the physician's) connection with a water company whose products he had been so earnest in recommending. Should physicians then, as household consultants, take a financial interest in any drug, mineral spring, instrument, appliance, or institution, when such an interest might in any way prostitute our best judgment? Why not remember our patient's rights? He looks to us for untrammeled judgment; has he not then a right to expect that we receive no further financial return than what we charge him for our services? If it becomes necessary for physicians to take a financial interest in a water or in any other supply company, to insure better service, let them combine and control such supply, that they may be able to dictate absolutely the policy of such a company, and not be, as in the cases cited, merely nominal stockholders. The public and clientage would thus, through the printed matter of such an organization, be informed as to who are actual owners, and participants in the profits of such a company.

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Diabetes Mellitus in Hebrews.

PHILADELPHIA, March 3, 1901.

To the Editor:—In your editorial[1] on "Diabetes Mellitus" you mention Dr. von Noorden's communication on this subject, and with regard to etiology, special emphasis is given to the predisposition of the Jews to diabetes. I certainly can not agree with this view, at least not to the full extent of the general opinion. It is true, Jews are proportionately more disposed to diabetes than other people, but this fact has nothing to do with the race of Jews, and by the suggestion of the widespread prevalence of diabetes their dissemination and admixture with Indo-Germanic blood is placed on a wrong premise.

It is a well-known fact that nervousness, overstrain, overwork and cares are factors in the etiology of diabetes. If we look on the statistics of diabetes, we find that merchants, bankers, etc., furnish the greater number of diabetics. If we consider this fact, we need not wonder that the Jewish race furnishes a relatively larger proporton of sufferers from this affection. Several years ago Dr. Krämer, of Frankfort-on-the-Main, published statistics of the City of Frankfort in regard to diabetes, and he came to the same conclusion to which Dr. von Noorden, of the same city, comes. No one conversant with the conditions of Frankfort can help knowing that this city quite particularly has a large population of Jewish merchants, bankers and businessmen in general, perhaps in a much greater proportion than any other city. At that time Dr. Ruff, of Carlsbad, Bohemia, the Mecca of diabetics, rejected the statistics of Dr. Krämer and on the basis of the number and occupation of the visitors to Carlsbad. Dr. Ruff states that the lists of the Carlsbad visitors are not in agreement with Dr. Krämer, and no doubt neither with Dr. von Noorden. Dr. Ruff mentions that even most of the women diabetics who come to Carlsbad are business women, who are burdened with the occupations which as a rule are rather consigned to men.

I do not know whether this discussion between Dr. Krämer and Dr. Ruff ever appeared in a medical journal, as at that time it appeared in the *Allgemeine Zeitung des Judenthums* (1895 or 1896). Yours respectfully,

ALBERT BERNHEIM, M.D.

"The Technique of Bloodless Work."

NEW YORK CITY, March 16, 1901.

To the Editor:—My attention has been called to a letter from Dr. J. N. McCormack, in THE JOURNAL for March 2, commenting on my article on bloodless work, in THE JOURNAL for February 9.

Dr. McCormack boils over with righteous wrath, and so far forgets the amenities of warfare—which prohibit cruel or unusual punishments—as to call me, by implication, a "Christian Scientist." The connection seems a trifle obscure. But I suppose he cast about in his mind for the worst name he could think of, and just naturally hit on that one.

As a matter of fact, there was no personal animus whatever back of my article, in which the treatment of Governor Goebel was mentioned. The journals, medical and lay, which touched

1. JOURNAL A. M. A., March 2.

upon the matter in a paragraph or so, stated that he had been bled to control inward bleeding; but the physician's name did not appear. Consequently I had no means of inquiring directly. I presume that there are many other doctors besides myself who supposed the statements true, as they went uncontradicted.

So much in explanation, and I am taking the first occasion after seeing Dr. McCormack's letter to withdraw my statement which, though not wilfully, has done him such injustice. Indeed, the actual treatment as he explains it could not be improved upon. It was wise and followed the most modern surgical standards. The use of hot, intravenous saline infusion so promptly was exactly the right thing done at the right time. I can but express surprise at a report becoming spread abroad, therefore, so at absolute variance with the facts as that which reached physicians here.

Dr. McCormack may rest assured that when I reprint my article for distribution, the Goebel reference will be wholly omitted; and I beg once more to assure him of my regrets.

Respectfully, ROBERT H. M. DAWBARN, M.D.

Arsenic in Pernicious Anemia and Leucocythemia.

BALTIMORE, MD., March 18, 1901.

To the Editor:—In THE JOURNAL of March 16, page 756, the following words appear—a part of a summary of some remarks by me before the Johns Hopkins Hospital Medical Society: "He has been astonished to hear the value of arsenic in pernicious anemia and leucocythemia questioned recently by a distinguished Boston clinician. There is positive evidence of its usefulness in these conditions."

I regret to say that this report of my remarks is somewhat erroneous. I referred, in an informal discussion, to Dr. Cabot's interesting remarks before the Association of American Physicians, last summer (Pernicious Anemia; A Study of 110 Cases. Transactions of the Association of American Physicians, 1900, xv, 334), and did express surprise that the author should regard arsenic of so little value in these cases, stating that it was my impression that in some instances it was of material benefit. I was far from stating, nor do I believe that the value of arsenic is by any means *positively proven*. And I am not aware that Dr. Cabot has questioned the value of arsenic in leukemia. Yours sincerely, W. S. THAYER, M. D.

The Determination of Sex.

CANTON, OHIO, March, 9, 1901.

To the Editor:—Since you have considered it of sufficient importance to give editorial space to an article on the above subject, it may be of interest to know of a case where, for extra-uterine pregnancy, it was necessary, in the laparotomy done for relief, to remove the left Fallopian tube and ovary. This woman, with a right ovary intact and a left ovary removed, has since given birth to two children, with an interval of several years between births. The first child was a female, the second a male. One would think that in this day there would be a sufficient number of mono-ovarian women giving birth to children, for one wishing to lay down a scientific theory, based on the hypothesis of ovarian determination of sex, to have led to an investigation of that phase of the subject for facts. Very truly, EDWARD P. MORROW, M.D.

Medico-Sociologic Data Wanted.

ATLANTA, GA., March 1.

To the Editor:—The sociological committee of the Tri-State Medical Society of Alabama, Georgia, and Tennessee desires information relative to any and all states that have enacted laws regulating marriage of criminals, insane, epileptics, tuberculous or those suffering with venereal disease. It also desires information of any legal enactments or literature on the subject of rendering habitual criminals sterile. Any information along this line, from any of your readers, will be greatly appreciated and gladly received. R. R. KIME, Chairman.

308 and 310 Eng.-Amer. Building.

Book Notices.

THE MEDICAL EXAMINATION FOR LIFE INSURANCE, and its Associated Clinical Methods, with Chapters on the Insurance of Substandard Lives and Accident Insurance. By Charles Lyman Greene, M.D., St. Paul, Minn., Clinical Professor of Medicine and Physical Diagnosis in the University of Minnesota. With 99 Illustrations. Cloth. Pp. 426. Price $4.00. Philadelphia: P. Blakiston's Son & Co. 1900.

Dr. Greene's treatise on medical examinations for life insurance is by far the most complete work on the subject extant. He states that the reason for the existence of this book is the introduction into medical schools of courses of lectures dealing especially with the medical aspect of life insurance. The work is, however, of equal if not greater value to the medical examiner, who has heretofore had relatively little to guide him, with the exception of the somewhat antiquated treatises up to this time obtainable and the exceedingly brief instructions issued to medical examiners by the respective insurance companies. The most valuable section is that which deals with the conventional questions found on examination blanks, their proper analysis and answers. It is gratifying to note that the author has obtained permission to use and insert the Nylic standard table of heights and weights. The influence of family history in modifying the value of risks is fully considered, as is also the effect of occupation on longevity and the incidence of disease. The section on examination of the chest is very well presented and excellently illustrated. One of the vexed questions that confront the examiner is that of the significance of a pulse which does not vary whether the applicant is sitting or standing, and this question does not seem to be considered by the author. The discussion of the examination of the urine is concise and excellent, but nothing authoritative is stated regarding the important points of the bearing of occasional albuminuria, the so-called physiologic albuminuria, occasional glycosuria, and digestive glycosuria on the value of risks. The author merely quotes, without especial comment, the already published dicta of certain medical directors regarding these matters. A unique chapter is that on the insurance of substandard lives—a class of risks which nowadays is attracting a great deal of attention among the so-called "old-line" companies. The last two chapters of the volume are devoted to fraud and to accident insurance. The book, taken as a whole, is commendable and marks a great advance in the literature of this important subject.

THE CARE OF THE CONSUMPTIVE. A Consideration of the Scientific Use of Natural Therapeutic Agencies in the Prevention and Cure of Consumption; Together with a Chapter on Colorado as a Resort for Invalids. By Charles Fox Gardiner, M.D., Non-resident Fellow of the New York Academy of Medicine. Cloth. Pp. 182. Price, $1.25. New York and London: G. P. Putnam's Sons. 1900.

The author states that his object is to give in a clear and practical way the rules which should govern the consumptive in the use of fresh air, sunlight, food, rest and exercise, so that these natural beneficial agencies shall be applied to the best advantage. These are, as he maintains, still the best, most convenient and durable of any curative methods applied in the disease. The book is brief in its treatment of the subject, but seems to be amply full for its purpose, while the advice on the whole is excellent. The latter third of the work is given to a description of the climate of Colorado and its advantages, in which it is shown how many consumptives can make their residence there and obtain perfect health. The author believes that the nervous system does not suffer from high altitudes and the typical nervous invalid is not necessarily a contraindication to resort to that section. It is interesting to note how writers of elaborate works on consumption are more conservative than many who merely repeat the prevalent views. This one apparently does not favor the extreme theories of contagion that are held. An impaired vital activity giving the germs, so universally diffused, a chance is, he holds, the more important factor, and he uses as his argument the experience of Colorado Springs, where the danger from contagion should be the greatest, if the views held by many were correct.

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THE HISTORY OF MEDICINE IN THE UNITED STATES. A Collection of Facts and Documents Relating to the History of Medical Science in This Country, from the Earliest English Colonization to the Year 1800. With a Supplemental Chapter on the Discovery of Anesthesia. By Francis Randolph Packard, M.D. Illustrated. Cloth. Pp. 542. Price, $4.00 net. Philadelphia and London: J. B. Lippincott Company. 1901.

While there have been many "bits" of medical history published heretofore, some complete as they affected one colony, or one phase, this we believe is the first to appear thoroughly covering all the colonies and all that relates to the subject. The first chapter is general in its character, giving an insight into the conditions existing in the early days when the physician was a combination of preacher and doctor, if not a combination of half a dozen callings. This is the most interesting part of the book, at least to those who love the curious. The author has evidently ransacked every library and searched every book that could possibly throw light on those who founded the profession of medicine in the United States.

Much that is curious, as well as instructive in many ways, is recorded in this part. The following quaint ending to a manuscript on "Receipts to Cure Various Disorders," sent over from London in 1643, by a Dr. Ed. Stafford, is worth quoting: "*Nota bene.* No man can with a good conscience take a fee or a reward before ye partie receive benefit apparent; and then he is not to demand anything but what God shall putt into the head of the partie to give him. And he is not to refuse anything that shall be so given him, for it comes from God. A man is not to neglect that partie, to whom he hath once administered, but to visit him at least once a day, and to medle with no more than he can well attend. In so doing he shall discharge a good conscience before God and man." Certainly this is good advice. But the following notice, which appeared in the *Boston Evening Post and the General Advertiser*, November, 1781, would be more approved to-day: "The physicians of the town of Boston hereby inform the public, that, in consideration of the great fatigue and inevitable injury to their constitution, in the practice of midwifery, as well as the necessary interruption of the other branches of their profession, they shall, for the future, expect that in calls of this kind, the fee be immediately discharged."

Two chapters are taken up with a description of the epidemics which occurred previous to 1800. The sufferings of those early pioneers are graphically described and the sacrifices made by the physicians of that time, as told here, should make the commercially-inclined modern physician blush. Epidemics were common in those days, smallpox especially being often prevalent and generally terribly fatal. The account of the inoculation against this disease, and of the application of vaccination and the excellent results obtained, should be read by those who think they think that vaccination is not one of the greatest discoveries of the ages, and that it has not proved one of the greatest blessings that medical men have given to humanity.

An account of medical education before the formation of medical schools occupies one chapter, and in another is given a history of the early medical colleges. The medical profession in the War for Independence, the earliest hospitals, medical societies and medical legislation in the colonies are among the subjects thoroughly treated. A chapter is devoted to anesthesia, but why we can not imagine. The author has otherwise confined himself to events preceding the opening of the nineteenth century.

Too much praise can not be bestowed on this history of early medical history in this country. The author has not only given us a most complete account of all that pertains to medicine and medical men, but he has put it before the reader in such a manner as to make the reading of it a pleasure. The subjects are so classified and arranged that little is duplicated, something hard to avoid when it is considered that each colony, to a certain extent at least, has to be treated as an entirety. The whole subject is so exhaustively, logically and scientifically treated by Packard that his book will immediately become a standard work on the subject.

A MANUAL OF MEDICINE. Edited by W. H. Allchin, M.D. (Lond.), F.R.C.P., F.R.S.E., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital. Vol. I. General Diseases: Diseases Excited by Atmospheric Influences; the Infections. Vol. II. General Diseases continued: Diseases Caused by Parasites; Diseases Determined by Poisons Introduced into the Body; Primary Perversions of General Nutrition; Diseases of the Blood. Cloth. Pp. 441 and 380 respectively. Price, $2.00 per volume. New York: MacMillan Co. 1901.

This work, two volumes of which have already appeared, is a brief but in many respects satisfactory compendium of medical practice. It is more of a compendium in that it is a composite work, the subjects being treated by different authors, the names of many of whom carry weight in this country as well as in Great Britain. The general articles are largely by the editor, Dr. Allchin, but the special ones on different diseases are by many different writers. This volume satisfactorily covers the subject of general diseases in the main, though the articles are necessarily brief, in one or two cases unduly so. For example, pneumonia is a general infection, but is here treated only in its aspects as an epidemic disease, leaving out the general description and what the practitioner most desires to know. The second volume also deals with general diseases and is of the same general character.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By Horatio C. Wood, M.D., LL.D. (Lafayette-Yale), Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. Eleventh Edition. Remodelled and in Greater Part Rewritten. By Horatio C. Wood and Horatio C. Wood, Jr., M.D., Demonstrator of Pharmacodynamics in the University of Pennsylvania. Cloth. Pp. 850. Price $5.00. Philadelphia and London: J. B. Lippincott Co. 1900.

Wood's Therapeutics has been so long before the medical public that its eleventh issue hardly requires an introduction. The author, however, states that while other editions have been chiefly improved by incorporation of new matter, in the present edition an effort has been made throughout to get a new view of the whole subject of therapeutics, presented in the most attractive form. The use of small type for minor descriptions and discussions, etc., is an advantage. Taking the references out of the body of the text and putting them in nonpareil at the end of the chapter is perhaps more satisfactory to many, but this is not as well as having them directly before the eye on the page in which they are made; this, however, is a minor matter. All new drugs of any value, according to medical experience, are included, though no work can keep up with the flood of products which are constantly being put out and recommended to the medical profession. The present edition will undoubtedly still hold its place among the standard textbooks on therapeutics.

THE YEAR BOOK OF THE NOSE, THROAT, AND EAR. The Nose and Throat, edited by G. P. Head, M.D., Professor of Laryngology and Rhinology in the Post-Graduate Medical School of Chicago. The Ear, edited by Albert H. Andrews, M.D., Professor of Otology in the Post-Graduate Medical School of Chicago. Cloth. Pp. 416. Price $2.00. Chicago: The Year-Book Publishers. 1901.

The previous volume of this year-book was so well received that the editors continued their work and give us this year a somewhat larger compilation of the literature on nose, throat and ear diseases than was given last year. The abstracts are well selected and cover the whole range of the ordinarily accessible literature. They notice the difficulties which every one must experience who is engaged in the work of culling out the essence of what has been written, and remark in their preface that many articles have been omitted on account of their being simply statements of accepted opinions written for the general practitioner, or in some cases that they touch upon so many points of such importance that abstracting is not possible. They are mentioned under proper headings so that those interested may readily refer to them. The two volumes that have appeared of this year-book make one hope that it will receive sufficient support to justify its continuance for years to come.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS, or the action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., Aberd., Professor of Materia Medica and Therapeutics in the University of Michigan. Second Edition, Revised and Enlarged. Illustrated with 47 Engravings. Cloth. Pp. 732. Price $3.75. Philadelphia and New York: Lea Brothers & Co. 1901.

The first edition of this work was exhausted in a little over a year and the present volume has been brought up to the latest advances in the subject, though not many changes, as the author remarks, have been found necessary. The work holds a position of its own among handbooks on therapeutics and its apparent success is well deserved.

Association News.

The Doctors' Special to St. Paul.

LOUISVILLE, KY., March 15, 1901.

To the Editor:—The nearness of the next meeting of the ASSOCIATION in St. Paul suggests the necessity of plans being laid for attendance by the profession of the country, and consequently the selection of a route. The many advantages of traveling in large numbers to these meetings can be vouched for by those who have been fortunate enough to so travel to several meetings in the past.

As Louisville is one of the gateways for Chicago and St. Paul, arrangements have been made for special accommodations from this point, with special doctors' sleepers attached to the regular service of the Monon Route to Chicago and from that point by the Chicago & Northwestern Railroad to St. Paul. Close connections will be made at Louisville with the Southern and the Louisville & Nashville railways from points in the South, Atlanta, Birmingham, Nashville, Asheville, and Memphis. A day trip will be made between Louisville and Chicago, June 3, and a night trip from Chicago to St. Paul, arriving there in time for breakfast the first day of the meeting, June 4.

At this writing the rates for the St. Paul meeting have not been announced, but the undersigned will be pleased to answer queries as to the connections, time of arrival and departure of connecting lines, etc., and make sleeping-car reservations for those who wish to join the "Doctors' Special to the AMERICAN MEDICAL ASSOCIATION." Very truly yours,

111 West Kentucky Street. HENRY E. TULEY, M.D.

Deaths and Obituaries.

John R. Page, M.D., University of Virginia, Charlottesville, 1850, died at that institution March 11, from acute Bright's disease, aged 71. He was chief surgeon in the confederate service, and was afterward a professor in the Louisiana Military Academy, and in the Washington Medical College of Baltimore. In 1873 he became a professor of agricultural chemistry and scientific farming in the University of Virginia. In 1887 he resigned the latter position and resumed the practice of his profession.

John A. Goldsberry, M.D., Rush Medical College, Chicago, 1857, who was struck by a train at West Union, Ind., February 25, died at Kingman, March 7, from his injuries. He was 65 years old. He served through the Civil War at Baton Rouge, La., and then practiced in Annapolis, later in Bloomingdale, Ind. He was a member of the Park County and Indiana State Medical societies, and of the AMERICAN MEDICAL ASSOCIATION.

Jason Walker, M.D., Medical School of Maine, Brunswick, 1865, a member of the Androscoggin County and Maine State Medical societies, and of the AMERICAN MEDICAL ASSOCIATION, and for more than thirty years a practitioner in Minot, Maine, died at his home in that place, from chronic bronchitis, March 7, aged 66.

Edward Bradley, M.D., University of Vermont, 1859, at which institution he was for a time demonstrator of anatomy, died at his home in New York City, aged 65 years. During the Civil War he was an acting assistant-surgeon. He was an active dispensary surgeon and in repute as a neurologist.

James Johnston, M.D., Starling Medical College, Columbus, Ohio, 1857, died suddenly from nephritic colic March 9, at his home in Gallipolis, Ohio, aged 67. He was assistant-surgeon, O. V. I., during the Civil War, and a prominent physician of southern Ohio.

John T. Black, M.D., College of Physicians and Surgeons, Baltimore, 1883, for several years physician at the steel works of the Carnegie company, Duquesne, Pa., died at his home in that place, March 10, from pneumonia, after an illness of three weeks, aged 53.

Thomas A. Fairbairn, M.D., Bellevue Hospital Medical College, New York, 1867, formerly of Detroit, Mich., but for the last thirteen years a resident of California, died in San Diego, Cal., from pneumonia following influenza, March 6, aged 71.

Ferdinand Bazan, M.D., Faculty of Medicine, Paris, France, 1873, formerly a well-known practitioner of San Francisco, and for fourteen years surgeon-in-chief of the French Hospital, died at Glion sur Montreux, Switzerland, March 6.

Henry C. McCoy, M.D., Northwestern University Medical School, Chicago, 1865, a pioneer physician of Algona, Iowa, where he had practiced for more than thirty years, died at his home in that place, from pneumonia, March 10, aged 62.

Caleb E. Martin, M.D., University of the Victoria College, Cobourg, Ont., 1856, of Toronto, died March 11, at Whatcom, Wash., where he had gone on account of ill health. He served as a surgeon under General Sheridan in the Civil War.

John B. McDonald, M.D., Harvard University Medical School, Boston, 1865, an early settler and practitioner of Dickinson, N. D., who moved, in 1896, to Spokane, Wash., died at his home in that city, March 3, aged 63.

Thomas Riley, M.D., University of Michigan, Ann Arbor, 1874, who practiced for many years at Adams, Mass., died from general paresis, after an illness of two years, at the Northampton Hospital, March 4, aged 58.

Robert H. Dodge, M.D., University of Georgetown, Washington, D. C., 1893, physician-in-charge of the Conrad Sanatorium, Relay Station, Md., died at his home in Bethesda, Md., after a short illness, March 11, aged 29.

Ashley N. Denton, M.D., Texas Medical College and Hospital, Galveston, 1866, died at his home in Austin, Texas, March 4. He was for several years superintendent of the state insane asylum at Austin.

Allan S. MacDonell, M.D., College of Physicians and Surgeons of Ontario, Toronto, 1882, died at Rat Portage, Ont., where he had practiced for several years, March 6, from pneumonia, aged 47.

Emory Hawkins Davis, M.D., University of Vermont, Burlington, 1872, died at his home in Plainfield, Conn., aged 56. He was a member of the State and Windham County medical societies.

Hiram Crounse, M.D., Castleton Medical College, Castleton, Vt., 1847, one of the oldest physicians of Albany County, New York, died at his home in Clarksville, March 1, aged 80.

Philip Du Bois Hoornbeck, M.D., Geneva Medical College, Geneva, N. Y., 1846, died recently at his home in Wawarsing, N. Y., where he had practiced for more than half a century.

Caleb Hale, M.D., University of Louisville, Ky., 1859, for more than forty years a practitioner in Daviess County, died at his home near Whitesville, Ky., March 7.

R. L. Mayfield, M.D., Barnes Medical College, St. Louis, died at Mayfield Sanatorium, Marble Hill, Mo., of which he was assistant superintendent, March 5.

Frederick M. Johnston, M.D., Detroit Medical College, 1897, a practitioner of Three Oaks, Mich., died from appendicitis, in a Detroit hospital, March 1.

John Sims, M.D., Medical College of Georgia, Augusta, 1855, prominent as a citizen, physician and legislator, died at his home in Leverett, Ga., March 4.

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Jesse A. Hartson, M.D., College of Physicians and Surgeons, Baltimore, 1894, died at his home in Ava, N. Y., March 7, from pneumonia, aged 33.

John Sylcurk, M.D., University of Maryland, Baltimore, died from consumption, March 5, at the home of his parents in Frederick, Md., aged 25.

David S. Cook, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1855, died at his home in Wheatland, Iowa, suddenly, March 7, aged 76.

Thomas J. Patterson, M.D., University of Louisville, 1851, died at his home near Caney Spring, Tenn., March 3, after a lingering illness.

W. Eugene Martin, M.D., University of Louisville, 1894, died at McColl, Marlboro County, South Carolina, March 8, aged 25.

Martin J. Hutchens, M.D., University of Vermont, Burlington, 1862, died at his home in Redwood, N. Y., March 1, aged 75.

James H. Rogers, M.D., Jefferson, 1855, once a practitioner of Sag Harbor, N. Y., died in New York City, March 12, aged 71.

Sullivan B. Dorn, M.D., University of Buffalo, died in a hospital at Bradford, Pa., from pneumonia, March 6, aged 59.

Alonzo T. Smith, M.D., Geneva Medical College, died at his home in Syracuse, N. Y., March 8, from pneumonia, aged 80.

Sanford H. Sloan, M.D., Missouri Medical College, St. Louis, 1881, died from cerebral hemorrhage, March 10.

Paul von Seydewitz, M.D., University of Heidelberg, Germany, 1869, died in New Orleans, March 15, aged 74.

David O. Moore, M.D., health officer of Bloomington, Ill., died from chronic kidney disease, March 15, aged 68.

Miscellany.

The Vitality of the Bubonic Bacillus.—Professor Koch, of Berlin, reports upon 1400 cases of the bubonic plague, as seen in Bombay and other parts of India. He avers that the bacillus has but little vitality outside the bodies of animals, and adds that Haffkine's serum is endowed with undoubted protective qualities.

Cataract and Tetany.—Similarly to diabetic cataract, the lens may become clouded during the course of tetany. The cataract in this case is regular and does not resemble the ordinary variety. The *St. Petersburg Med. Woch.*, No. 4, mentions two cases, one a woman of 22, the other a man of 35. The tetany in the latter case had persisted eleven years; all the hair had fallen out, and there were frequent attacks of headache and diarrhea. The cataract ripened in each eye with a year's interval. Both were successfully removed.

Medical Advertising and the Lay Press.—Whenever we find a lay journal that governs itself by high ethical principles as regards certain medical questions in respect to which members of the lay press are generally and collectively sinners, it is a pleasure to note the fact. The following editorial extracts, therefore, from the *Cedar Rapids* (Iowa) *Gazette* are offered with commendation:

> It is possible that *The Gazette* has no business to refer to what other papers do in business matters, and yet it may be true that there are some questions, the calling attention to which might result in good. No reference is made or intended for any publication in particular, the simple idea being that newspapers in general should refuse to contaminate their columns with a lot of vile advertisements, some of them being filthy. It looks as if papers devoting so much space to such advertising are either hard up for clean advertising or else have no care as to how much filth they place before their readers. * * * There are the villainous references to female troubles, which no honorable or decent paper would print. Publications that name diseases and display them in great black type insult the sacredness of womanhood. There are a number of such advertisements and the more of them the greater the shame.
>
> Among the vile advertisements also are remedies for all sorts of private and venereal diseases, and it is only reasonable to suppose that it must "pay" the advertiser, and consequently it follows that some readers of such papers need the stuff.
>
> Certain kinds of pills are advertised that are intended for criminal purposes, and they lead to added crimes by making those immorally inclined believe that it will save them from trouble, when it gets them into it instead.
>
> No parent should permit papers containing such advertisements to be found in their homes.
>
> Bishops, clergymen, editors and others are either induced to permit the use of their names for notoriety, are paid for so doing, or their names are forged to all sorts of rotten advertisements.
>
> Reading notices concerning various nauseating matters are placed right between clean news items in order to be sure and attract attention. How do clean advertisers of clean goods like to see it? How much is their advertising worth in such papers? * * *

Antimosquito Experiences With Malaria.—Professor Fermi, of Sassari, Sardinia, states (*Gazz. degli. Osp.*, March 3) that 27 soldiers were placed in a dormitory in which 17 out of the 18 previous inmates had been taken with malarial fever. The room had been whitewashed and screened, and the new occupants were protected with gloves and hoods, but none took any quinin. None showed any trace of malarial infection during the month of the test, while 23 of the occupants of the next dormitory became affected with malaria. Another building had the reputation of being extremely malarial, but after the windows were screened none of the new inmates became affected. The third experiment was with a party of 25, and another of 32 soldiers who marched and camped out along the most malarial portion of the shore. The only protections in this case were gloves and hoods worn by the members of the expeditions. None showed any signs of infection, but a mocking spectator who accompanied them on horseback, unprotected from mosquitoes, exhibited symptoms of the quotidian type in less than a week. Another party of 27 members slept in the open air for ten nights, with no symptoms of infection except in the case of one youth who was incommoded by the hood and occasionally pulled it off.

Does Vaccination Prevent Smallpox?—The *Cincinnati Lancet-Clinic* of March 16 prints a letter recently sent to Dr. E. Stuver, in which the writer says: "The only objection I can possibly put forth against your deductions is that you believe that *vaccination prevents smallpox*. On this rock *you have foundered*, as no such fact can be sustained by science, experience or common sense. Take away sanitary science and all infectious diseases will be rampant in the land." In Dr. Stuver's comprehensive answer he defines "sanitary science" as "the science and art of promoting healthy development, maintaining the mature organism in a healthy condition of normal functional activity, preventing the invasion of diseases and stamping them out as soon as possible when they have arisen," and says: "1. No historical fact is better established than that, before the discovery of vaccination, smallpox was one of the most fatal and dreaded scourges which afflicted humanity. It swept over Europe, leaving death, devastation and terror in its path; indeed, so widespread was the disease that, as the historian Macaulay informs us, it was a rare thing at one time to find a person in London not disfigured or marked by that dread disease. To-day smallpox is one of the rarest diseases, and scarcely figures in mortality statistics. You say this reduction has been brought about by 'sanitary science,' whatever you may mean by that, because if vaccination is *not* one of the most effective sanitary measures the world has ever seen, I do not know what you would designate it. 2. The English, German, French or American soldiers who have been properly vaccinated can be brought face to face with smallpox in the unhealthy tropics, in places reeking with filth, and all sanitary conditions much worse than the London described by Macaulay, and these soldiers are almost absolutely immune against the disease. Why is this? Does the sanitation of the countries from which they come, thousands of miles away, protect these men, in the midst of unnatural and health-destroying environments, against a disease which is destroying thousands of *acclimated natives*? 3. Why is it, if vaccination does not prevent smallpox, that epidemics of the disease can be brought under control by this means, and *by this means*

alone? Else why should the bitter opponents of the measure resort to it for safety in the face of danger, as they did in the epidemic in England a few years ago? 4. I have often thought that through generations of vaccination a vital resistance has been created, and a partial immunity established, so that when smallpox attacks even those who have not been personally vaccinated, owing to the mitigating influence of vaccination in their ancestors, the disease assumes a milder form. 5. As every observer knows, smallpox epidemics nearly always follow comparatively long periods of immunity from the disease, when the people have become careless, neglected to be vaccinated, and there are large numbers susceptible to the disease. 6. But the antivaccinationist holds up his hands in horror, and with a scared look and bated breath calls our attention to the horrible diseases and occasional deaths caused by vaccination. Admitted that syphilis and other diseases have been conveyed, and blood-poisoning caused in rare instances (and they are exceedingly rare, compared with the whole number of vaccinations), still the evil is but a tiny trickling rill alongside the great river of beneficence which this grand discovery has brought to soothe and save suffering humanity. With approved modern methods for the production and marketing of bovine vaccin virus, and proper antiseptic or aseptic precautions in making the vaccinations, even these infrequent accidents ought to be almost entirely prevented. It would be just as fair to formulate an opinion as to the propriety and justifiability of abdominal operations and major surgical operations from their pre-antiseptic and pre-aseptic mortalities as it is to condemn vaccination for accidents and dangers that attended the use of infected virus and careless methods of performing the operation years ago, rather than to judge it by the results following the use of pure bovine virus and aseptic operating of the present time. 7. Then, too, a method which has passed through the ordeal of more than a hundred years of the closest investigation and most searching criticism, which has received the unqualified approval and support of nearly all scientific physicians in the whole civilized world, which has lifted the dark cloud of terror which paralyzed humanity so that the great majority of people have come to regard the once dread disease as an insignificant danger; when, I say, any preventive measure has accomplished such results as these, he is, indeed, a bold man who will advocate its discontinuance, unless he has something better to offer in its place. 8. I have often thought that, with the great benefits and small dangers of vaccination so generally recognized, and its benefits established on such a firm foundation, it was largely a matter of supererogation to resort to such severe measures in warding off smallpox. The persons who will not protect themselves against the disease do not have 'common sense' enough to enjoy good health, and should be left to their fate."

Societies.

COMING MEETINGS.

Tri-State Medical Society of Iowa, Illinois and Missouri, Keokuk, Ia., April 2-3, 1901.
Medical Association of the District of Columbia, Washington, D. C., April 2, 1901.
Tennessee State Medical Society, Nashville, April 9-11, 1901.
Florida Medical Association, Jacksonville, April 10, 1901.
Western Ophthalmological and Otolaryngological Association, Cincinnati, Ohio, April 11-12, 1901.
Medical Association of the State of Alabama, Selma, April 16, 1901.
Medical Society of the State of California, Sacramento, April 16-18, 1901.
South Carolina Medical Association, Florence, April 17, 1901.
Medical Association of Georgia, Augusta, April 17, 1901.
Louisiana State Medical Society New Orleans, April 18-20, 1901.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 23-26, 1901.
Texas State Medical Association, Galveston, April 23, 1901.
American Association of Genito-Urinary Surgeons, Old Point Comfort, April 30, 1901.
Association of American Physicians, Washington, D. C., April 30, 1901.

French Congress of Ophthalmology.—This congress is to convene at Paris, May 6. The subject announced for discussion is "The Value of Iridectomy in Glaucoma."

Carbondale (Pa.) Medical Society.—At the annual meeting of this society, held March 4, Dr. William W. Fletcher was elected president, and Dr. Sumner T. Davis, Jermyn, vice-president.

Union Medical Society of Northern Michigan.—This society announces its first quarterly meeting of the twentieth century, to be held at Greenville, April 9. Dr. Horace L. Bower, Greenville, is secretary.

Medical Society of the State of Tennessee.—The sixty-eighth annual session of this society will be held at Nashville, April 9, 10 and 11. Dr. William D. Haggard, Jr., is secretary, and Dr. Deering J. Roberts, chairman of the committee on arrangements.

Henderson County (Ill.) Medical Society.—This society was reorganized early this month, at Oquawka, and Dr. Isaac F. Harter, Longhurst, elected president; Dr. Coleman J. Eads, Oquawka, vice-president, and Dr. William D. Henderson, Biggsville, secretary and treasurer.

Lamar County (Ala.) Medical Society.—The annual meeting of this society was held at Vernon, March 4, and the following officers elected: Dr. Berry E. Turner, Richards, president; Dr. William L. Morton, Vernon, vice-president, and Dr. Judge C. Buckelow, Sulligent, secretary.

St. Clair County (Ill.) Medical Society.—The annual meeting of this society was held in Belleville, March 8, and the following officers elected: Dr. Julius Kohl, Belleville, president; Dr. James O. DeCourey, East St. Louis, vice-president; Dr. Buenavandura H. Portuondo, Belleville, recording secretary; Dr. Adolph E. Hansing, East St. Louis, corresponding secretary, and Dr. Adolph Schlernitzauer, Millstadt, treasurer.

Rhode Island Medical Society.—A meeting of this society was held at Providence, March 7, at which the election of officers for the year following the next annual meeting took place: Dr. George F. Keene, Howard, president; Drs. William R. White, Providence, and Christopher F. Barker, Newport, vice-presidents; Dr. Frank L. Day, Providence, recording secretary; Dr. Herbert Terry, Providence, corresponding secretary and Dr. Frederick T. Rogers, Providence, treasurer.

Berlin Society of Internal Medicine.—This society celebrated its twentieth anniversary February 18, with much ceremony and a banquet. Von Leyden was made honorary president, as the society in a large measure owed its inception to his efforts. Honorary membership was also conferred on Baccelli, Nothnagel and von Behring. E. Roux, of Paris, Erb, Ehrlich, Weigert, Babes of Bucharest, and Hassimoto of Tokio, were appointed to be corresponding members.

ST. LOUIS MEDICAL SOCIETY OF MISSOURI.

Meeting held February 16.

Dr. L. E. Newman, president.

Carcinoma of the Prostate.

DR. L. E. NEWMAN submitted a specimen of this. The patient, a man of 49, was operated on May 12, 1900, a suprapubic cystotomy being done to relieve an intense cystitis and for diagnosing the prostatic trouble, which was believed to be carcinoma. It was impossible to remove the prostate, so the bladder was simply drained. The patient did well for seven months, but died in coma recently, having had cerebral symptoms for the last three weeks. Death was probably due to metastatic carcinoma of the brain, but this was not verified. The kidney contained three or four concretions and its artery was unusually large. The bladder at the time of operation was greatly thickened and roughened, so much so that it resembled the interior of a heart. After the seven months' drainage, it looked fairly healthy. When the patient was placed on the table he was deeply septic, the temperature being 103 F. His weight at the time of his death had fallen from 230 to 150 pounds. There were no kidney symptoms, unless the coma was one. The pain in the rectum was frightful and interfered with sleep. The prostatic growth he believed to be cancerous, because of its consistency and the involvement of surrounding structures.

Veratrum Viride: Its Undeserved Neglect.

DR. E. W. SAUNDERS read a paper on this topic. He considered its historical side, then its physiologic action. He finds it by far the safest motor depressant, as it has no detri-

Scrofulosis.

Chrystie, in "System of Pract. Ther.," places cod-liver oil first in the list of medicinal agents in treatment of scrofulosis. He recommends the following excellent emulsions:

R.	Olei morrhuæ	℥vi	192
	Olei gaultheriæ	℥i	4
	Mucilag. tragacanthæ	℥ii	64
	Aq. aurantii flor. q. s. ad	℥xii	384

M. Sig.: From a dessertspoonful to a tablespoonful three times a day.

Or,

R.	Ol. morrhuæ	℥vi	192
	Ol. gaultheriæ	℥i	4
	Spts. chloroformi	℥ii	8
	Glycerini		
	Yolk of egg, āā	℥v	20
	Aq. aurantii flor. q. s. ad	℥xii	384

M. Sig.: One dessertspoonful to a tablespoonful three times a day. The second mixture is not so thick as the first and is, for that reason, preferred.

Administration of Iodoform.

According to *Presse Med.*, Thibaut combines iodoform with equal parts of pulverized Ceylon cinnamon for external use or or pills. As a salve he uses the following:

R.	Iodoformi	gr. xv	1
	Essentiæ cinnamomi Zeylanici	m. v	30
	Vaselini	℥v	20

M. Sig.: For local application.

Medicolegal.

Experiments in Nature of Hearsay Evidence.—The Supreme Court of Louisiana holds, in the case of Seibert vs. McManus, that experiments made in the absence of parties interested in the results thereof are, as evidence, in the nature of hearsay, and, if received, the facts and conditions under which they were made should be shown to have been identical with those of the case before the court.

Failure to Call Physicians as Witnesses.—It appeared from the testimony in the personal injury case of Vergin vs. the City of Saginaw, that two physicians made examinations of the plaintiff a short time after she claimed to have been injured. One of the physicians made two examinations, and the other made one. They were for the purpose of ascertaining her physical condition. She did not call these witnesses. The Supreme Court of Michigan holds that it was error to refuse to give the jury an instruction stating these facts, and the plaintiff's failure to produce these witnesses might be given such weight by the jury as the latter saw fit.

Can Not Examine Persons to Settle Disputes of Doctors.—The plaintiff in the case of French vs. the Brooklyn Heights Railroad Company, a man 70 years of age, was thrown down, and sustained a painful injury to his side, by the sudden starting of one of the defendant's street cars, while he was attempting to board it. There was a conflict of evidence upon the question of whether at the time of the trial his side showed a depression at the point of contact, indicating a continuation of the difficulty. The trial court apparently found in his favor upon this point. It gave him a judgment for $400, and, taking this view of the case, the second appellate division of the Supreme Court of New York declares that it is unprepared to pronounce it excessive. Moreover, it holds that there was no error on the trial court in refusing to make examination of the plaintiff's person. Indeed, it holds that the defendant had no right to demand that the court examine the plaintiff to determine a dispute between opposing doctors. If there are any authorities in support of the contention that the trial court erred in refusing to inspect the plaintiff physically, it says that the defendant's counsel did not call the attention of the court to them, and, in the absence of such authorities, the judgment of the court below should be affirmed.

Liability for Delay in Delivery of Medicine.—On the appeal of the Pacific and Wells-Fargo Express Companies vs. Redman, the Court of Civil Appeals of Texas has reversed a judgment for $380.30 recovered by the latter party for damages for physical and mental pain suffered and for the retarding of her recovery by an unwarranted delay in the delivery of a package of medicine. This had been prescribed by her physician, and could not be procured at a nearer point than a town 23 miles or so distant, from whence it was ordered by telephone. But the order was sent by, and the medicine shipped to, a relative, without the agent of the express companies being notified for whom intended, although the agent knew of the relationship and had heard of the plaintiff's sickness. Now, such being the case, the court applies the rule that, in the absence of notice of the principal's connection with the contract, she can recover only such damages as her agent could have recovered in a suit brought in his own name. But such damages it holds she was entitled to, though not special damages, for a delay in the delivery of three days beyond the time the medicine should have been delivered. Nor, under the rule adopted in that state, does it consider that notice after the date of the contract of shipment would render the companies liable for special damages. Then, too, it suggests that on another trial, due consideration be given to the fact that the medicine could have been procured in a few hours, at small expense, by the use of a private conveyance, pointing out that a well-settled rule of law imposes upon persons injured the duty to exercise reasonable care to minimize the damages likely to result from the fault of another.

Proof of Account in Action Against Administrator.—In the case of Garwood vs. Schlichenmaier, administrator, the Court of Civil appeals of Texas has reversed a judgment for $150 for medical services. The plaintiff physician had testified, among other things, that he had treated the patient for epilepsy during a certain period of about two months, nearly every day, or sometimes every two or three days; that he wrote prescriptions for him frequently, and gave him medicine in his office. The court holds that this was inadmissible on account of being testimony with reference to a transaction with the intestate, within the meaning of the state statute providing that in an action against an administrator neither party shall testify as to any transaction with the deceased, unless called as a witness by the opposite party. In other words, it would seem that under such a statute a physician is incompetent to prove his own services as such to the deceased, against the representative. If, however, the performance of the services has been proved otherwise, when so proved, the plaintiff, the court says, it would seem, may testify as to the value. Nor does it consider than an account by a physician for his services is such a one as can be proved under the provisions of a statute making a verified open account prima facie evidence of the debt. The word "account" in that connection, it holds, applies to transactions between persons in which, by sale upon the one side and purchase upon the other, the title to personal property is passed from one to the other, and the relation of debtor and creditor is thereby created by general course of dealing. So, it holds that the only purpose for which a physician's account is admissible in evidence in such a case as this is to show that it has been properly verified as a claim against the estate of the deceased, and that it has been rejected by the administrator, and that it is error to admit it in evidence for any other purpose.

Medical Examiners by Courtesy—Use of Narcotics.—The Court of Civil Appeals of Texas says, in National Fraternity vs. Karnes, that the medical examiner is regarded as the agent of the insurer, save where it appears that he colludes with the insured to defraud the company. But in this case it was the medical examiner of the insurer who wanted to be insured, and in company with the organizer of the local lodge went to the office of another physician, taking with him his answers already written out and signed. As to what then occurred the testimony of that other physician was such as to

give the impression that there was really no medical examination, and that he treated the matter and signed the certificate as a mere act of accommodation for a brother physician, relying on the latter's being a physician himself, and understanding all the facts. In other words, that he in fact, and as an act of courtesy to his brother physician, gave him the benefit of his signature, for the purposes of the insurance, without any examination. Now, the court holds that the fraternity became bound, under the circumstances, by the information which the second physician possessed at the time he recommended the other as by information possessed by an agent. But, inasmuch as it is the established rule in that state that the agent's knowledge must have been obtained in the transaction of the principal's business to be imputed to the principal, it holds that the fraternity would not be charged with facts in the knowledge of the second physician or temporary medical examiner unless they were disclosed to him by the examination. Another point of interest in this case is with reference to the construction to be put upon the question: "Do you now, or have you ever used opium or other narcotics?" The answer was "No," and the court holds that the term "use" in this contract was correctly construed to have reference to a use which amounted to a custom or habit. Then, keeping this definition in mind, the court holds that, the answers having been warranted to be true, if this one was false it would invalidate the insurance, even if made in good faith, or through mistake, or by inadvertence, as well as if made intentionally.

Current Medical Literature

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), March 9.

1 *The Period of Incubation of Yellow Fever: A Study from Unpublished Observations. Henry R. Carter.
2 *A Contribution to the Bottini Operation for the Radical Relief of Prostatic Obstruction. L. Bolton Bangs.
3 *Acute Gastric Ulceration. H. Newton Heineman.
4 *Treatment of Acute Serofibrinous Pleurisy. Charles E. Nammack.

New York Medical Journal, March 9.

5 *Blood in the Urine as a Symptom and the Diagnosis of Its Source. Joseph Wiener, Jr.
6 The Specific Treatment of Acute Dysentery. (To be concluded.) William J. Cruikshank.
7 The Pathology of Intrauterine Death. (Continued.) Neil MacIlhatter.
8 *Ichthyol in the Treatment of Deep-seated Inflammations. Walter T. Slevin.
9 *Resorcin as a Preservative for Suprarenal Extract Solution. Seymour Oppenheimer.
10 *The Radical Treatment of Malignant Diseases of the Larynx. Ernest Waggett.
11 *The Surgery of the Turbinal Bodies, with a New Method of Operating. J. E. Boylan.

Philadelphia Medical Journal, March 9.

12 *False Pregnancy (Pseudocyesis) and Myxedema. Edward P. Davis.
13 *The Actions of Morphin Upon Metabolism, with Especial Reference to "Internal Secretion" and Its Bearing Upon Toxicology. Edward T. Reichert.
14 *Paresis Simulating Brain Tumor. Wharton Sinkler.
15 Operative Treatment of Tubercular Lymphomata of the Neck. Prescott Le Breton.
16 A Skiagraph of Bennett's Fracture of the Metacarpal Bone of the Thumb or "Stave of the Thumb." John B. Roberts.
17 A Cast and Skiagraph of the So-called Smith's Fracture of the Lower End of the Radius. John B. Roberts.
18 On the Necessity for the Organization of Bacteriological Commissions for the Study and Investigation of Quarantinable Diseases Under the Formation and Control of the Governing Authorities of the Countries Interested—An Absolute Necessity for the Scientific Management and Betterment of Maritime Hygiene and Quarantine. Henry B. Horlbeck.
19 *Albuminous Nutrition and Nutritious Albumen. Albert Bernheim.
20 The Function and Distribution of Combined Hydrochloric Acid in Proteolytic Digestion. A. E. Austin.

Medical News (N. Y.), March 9.

21 *Our Duties Toward the Consumptive Poor. S. A. Knopf.
22 *The Intravesical Evidences of Perivesical Inflammatory Processes in the Female. Frederic Bierhoff.
23 *The Prevention of Insanity. Henry Waldo Coe.
24 *The Tonometer and Its Value in Determining Arterial Tension. Henry L. K. Shaw.
25 The Present Status of the Subarachnoidean Injection of Cocain for Anesthesia (Corning-Bier Method). John S. Miller.
26 A Case of Peroneal Nerve-palsy from Muscular Effort. Charles J. Aldrich.

Boston Medical and Surgical Journal, March 7.

27 *Clinical Notes and Comments; Cancer of the Extremity of the Common Bile Duct. Robert T. Edes.
28 *The Interpretation of Bacteriological Findings in Diphtheria Diagnosis. Hibbert W. Hill.
29 Destruction of Left Eye and Frontal Lobe of Brain from a Shotgun Explosion. Edward Swasey.
30 *Convulsions in Children. William N. Bullard and Charles W. Townsend.
31 Acute Pancreatitis. M. H. Richardson.
32 Case of Recovery After Operation for Acute Pancreatitis. J. C. Munro.

Cincinnati Lancet-Clinic, March 9.

33 Is Ethical Medicine Mythical? Charles D. O'Hara.
34 A Mistake in Diagnosis in a Case of Pulmonary Tuberculosis. J. C. McMechan.

St. Louis Medical Review, March 9.

35 *Middle Ear Disease in Its Relationship to the Cranial Cavity. Otto Stein. With Abstracts of Five Cases, Explanatory of Illustrations. (To be continued.) Carl Barck.

Medical Fortnightly (St. Louis, Mo.), February 25.

36 Diseases of the Stomach. (Continued.) J. M. G. Carter.
37 Chronic Bronchitis and Its Treatment. Henry J. Ostrander.

Pediatrics (N. Y.), March 1.

38 *Persistence of Symptoms After Removal of Adenoids and Tonsils—Causes of. F. Huber.
39 Circumcision for Phimosis and Venereal Warts. William R. Blue.
40 Adenoids. Robert M. Lapsley.

American Practitioner and News (Louisville, Ky.), February 1.

41 Surgical Technic in Country Practice. E. J. Kempf.
42 Three Cases of Disease of Unusual Character (Aberrant Remittent Fever, etc.) T. B. Greenley.
43 Suggestive Therapeutics. L. L. Cole.

Journal of Nervous and Mental Diseases (N. Y.), March.

44 *The Amelioration of Paralysis Agitans and Other Forms of Tremor by Systematic Exercises. John Madison Taylor.
45 A Case with Symptoms of Cerebrospinal Meningitis, with Intense and General Alteration of the Nerve Cell-Bodies, but with Little Evidence of Inflammation. William G. Spiller.
46 A Case of Muscular Dystrophy. Charles G. Chaddock.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), March.

47 A Critical Review of the Literature of Gumma of the Spermatic Cord, with the Report of a Case. Herman Goldenberg.
48 A Case of Malignant Syphilis Cured by Zittmann's Decoction. Granville MacGowan.
49 New Intravesical Cystoscopic Instruments. 1. Modified Lithotrite and Foreign-body Forceps. 2. Foreign-body Forceps. Frederic Bierhoff.
50 A Case of Multiple Angiosarcoma of the Skin. James C. Johnston.

Journal of Eye, Ear and Throat Diseases (Baltimore, Md.), January and February.

51 *Some Observations Upon the Diagnosis and Treatment of Chronic Maxillary Empyema. John R. Winslow.
52 The Nasal Septum: Its Diseases. J. William Watson.

Cleveland Medical Gazette, March.

53 Sick-room Disinfection. Robert G. Schnee.
54 Etiology of Chronic Exudative Nephritis. D. S. Hanson.
55 Prognosis of Chronic Exudative Nephritis. O. B. Campbell.
56 Treatment of Chronic Exudative Nephritis. F. J. Morton.
57 Amyloid Kidney. A. S. Maschke.
58 Facial Erysipelas. C. W. Race.
59 Tobacco. C. E. Ford.

Fort Wayne Journal-Magazine, January.

60 *The Early Diagnosis of Gastric Cancer with a View to Its Radical Cure. G. W. McCaskey.
61 Some Uses of Local Anesthesia in Genito-urinary Surgery. Wm. N. Wishard.

New York State Journal of Medicine (N. Y.), February.

62 *Aseptic Minor Surgery. Douglas Ayres.
63 *An Epidemic of Diphtheria Traced to a Milk Supply. Chauncey P. Biggs.
64 *The Control of Diphtheria in Small Cities and Country Districts from the Bacteriological Standpoint. Veranus A. Moore.

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Buffalo Medical Journal, March.

65 Remarks on the Work of the Buffalo Laboratory on the Investigation of Cancer. Harvey R. Gaylord.
66 Formaldehyde. A. A. Young.
67 Senility, Senile Dementia and Their Medicolegal Aspects. F. H. Stephenson.
68 *Some Mistaken Impressions Regarding Troubles of the Genito-urinary Organs. J. Henry Dowd.
69 Empyema with Recovery in a Boy Two and One-half Years. M. L. Bennett.
70 The Surgical Diagnosis of Right-side Abdominal Diseases. A. L. Beahan.
71 Case of Extrauterine Pregnancy. L. G. Hanley.

Brooklyn Medical Journal, March.

72 The Biochemical Pathology of the Liver. Henry A. Bunker.
73 The Differential Diagnosis of the More Common Diseases of the Liver. Glentworth R. Butler.
74 An Address Before the Alumni Association of the Long Island College Hospital Victor C. Vaughan.
75 Acute Myelitis. Edward D. Fisher.

Annals of Ophthalmology (St. Louis, Mo.), January.

76 *Notes on the Bacteriology of the Conjunctival Sac and Its Bearing Upon Surgical Procedure. P. Chalmers Jameson.
77 *Alveolar Sarcoma of the Choroid. William Posey and Edward A. Shumway.
78 *Experiences in the Use of Homatropin as a Cycloplegic. Edward Jackson.
79 *Vernal Conjunctivitis. L. Webster Fox.
80 *Concerning the Development of Asthenopia and Errors of Refraction. Carl Schulin.
81 *Contusions of the Eye Producing Obliterating Hyphema. M. F. Weymann.

Medical Herald (St. Joseph, Mo.), March.

82 A Case of Nephritic Calculus with Symptoms of Thirty-three Years' Duration—Operation—Recovery. Herman E. Pearse.
83 Drainage. Fred G. Thompson.
84 Gastro-enteritis of Childhood. F. E. Coulter.
85 Hiram Christopher: Physician and Scholar. W. J. Bell.

Medical Dial (Minneapolis, Minn.), March.

86 Heredity from a Medical Standpoint and the Necessity of Its Recognition by the Public. Chester M. Carlaw.
87 Early American Medicine. James Moores Ball.

Medicine (Detroit, Mich.), March.

88 *Pseudo-phosphaturia as the Cause of a Persistent Urethritis. Alfred Schalek.
89 *The Choice of Operation for Stone in the Bladder. Byron B. Davis.
90 *Treatment of Septic Infections of the Kidneys, and Cysto-nephroses. L. L. McArthur.
91 Tuberculous Perimyocarditis with Tuberculous Aortic Aneurysm in a Dog. Ludvig Hektoen.

Louisville Monthly Journal of Medicine and Surgery, March.

92 Traumatism and Appendicitis. James S. Chenoweth.
93 Sanitation and Water-supply. H. Preston Sights.

Medical and Surgical Monitor (Indianapolis, Ind.), February 15.

94 Treatment of Chancroidal Adenitis. W. A. Hackett.
95 Perforating Ulcer of the Posterior Wall of the Stomach—Report of Case and Autopsy. A. T. Stewart.
96 Eye-strain as an Etiologic Factor in Nervous Headache. Frank M. Pray.

Maryland Medical Journal (Baltimore), March.

97 Eight Cases of Goiter in One Family. Samuel Amberg.
98 Four Cases of Sporadic Cretinism. Henry Barton Jacobs.
99 *Curetting the Urethra in the Treatment of Chronic Posterior Urethritis. George Walker.
100 A Review of Some of the Recent Work on the Physiology and Pathology of Blood. (Continued.) Thomas R. Brown.

Austin Flint Medical Journal (Mason City, Iowa), February.

101 What Should the General Practitioner Know About Diseases of the Eye? F. L. Rogers.
102 Variola. C. M. Swale.
103 Our Confrères. Shorland Harris.
104 Dr. Bowen for Governor. J. W. Kime.
105 Atropin in Inflammation of the Eye. Frank G. Murphy.

American Journal of Medical Sciences (Philadelphia), March.

106 *The Surgical Treatment of Ascites Due to Cirrhosis of the Liver, with Report of Two Cases. Frederick A. Packard and Robert G. Le Conte.
107 Splenic-myelogenous Leukemia with Pulmonary Tuberculosis. Report of Case. Henry L. Elsner and William A. Groat.
108 Hemorrhagic Typhoid Fever. Augustus A. Eshner and T. H. Weisenberg.
109 A Study of Congenital Sarcoma of the Liver and Suprarenal. William Pepper.
110 A Case of Sarcoma of the Thigh, for Which Disarticulation Was Performed Through the Hip Joint, with the Formation of a Posterior Flap. John Chalmers Da Costa.
111 *Stercoagnosis and Allied Conditions. Charles W. Burr.
112 Clinical Study of Acute Myocarditis. Beverly Robinson.

Medical Examiner and Practitioner (N. Y.), February.

113 Race in Relation to Life Assurance. C. Theodore Williams.
114 Locality and Occupation in Relation to Life Assurance. G. V. Poore.
115 The Relation of Deformities to Life Expectancy. John L. Porter.
116 Case of Splenic-myelogenous Leukemia. Talbot Jones.

International Journal of Surgery (N. Y.), March.

117 *The Fate of Sponges, Ligatures and Other Foreign Bodies in the Peritoneum. Carl Beck.
118 The Porro-Cesarean Operation—Report of Two Cases. A. L. Beahan.
119 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
120 *Pryor's Vaginal Versus Abdominal Hysterectomy. Hugh W. Crouse.
121 The Technique of Surgical Gynecology. (Continued.) Augustin H. Goelet.
122 Practical Suggestions Upon the Treatment of Rectal Diseases. (Continued.) James P. Tuttle.
123 Regional Minor Surgery. (Continued.) George G. Van Schaick.
124 Strangulated Inguinal Hernia, with a Congenital and an Acquired Sac, and Acute Hydrocele of the Tunica Vaginalis Testis, and a Congenital Hypertrophy of the Spermatic Cord, But Absence of the Epididymis—Operation. J. Coplin Stinson.
125 Clinical Report of Four Cases of Lupus Vulgaris. J. W. P. Smithwick.
126 The Abuse of the Poultice. Thomas M. Paul.

Southern California Practitioner (Los Angeles), February.

127 A Phenomenal Century of Surgery. F. C. Shurtleff.
128 The American Cigaret. William S. Fowler.
129 Where Do We Stand? W. W. Apple.
130 The Fear of Insanity as a Cause of Insanity. Henry W. Coe.
131 Inflation in Acute Diseases of the Ear. William T. Bolton.
132 Is Retinoscopy a Practical Method of Correctly Measuring Errors of Refraction? W. H. Roberts.

Charlotte Medical Journal, February.

133 Valvular Lesions of the Heart. L. B. McBrayer.
134 The Prevention of Recurring Hay Fever Attacks. Edward W. Wright.
135 Concerning Smallpox and Vaccination. E. D. Payne.
136 Evolution and Life. Joseph Clements.
137 Cystitis Accompanied by Malarial Hematuria. L. H. Warner.
138 The Comedy of Ethics. Paul Paquin.
139 Does Aseptic Vaccine Afford Absolute Protection Against Variola? A Test Case. T. J. Lawson.
140 Protonuclein as a Remedy for Tuberculosis, with Tabulated Report of Cases. C. W. Canan.
141 Extracts from Report of Research Experiments on the Physiologic Action of Petroleum. G. Burbridge White.

Texas Courier-Record of Medicine (Fort Worth), February.

142 Is It Smallpox? J. W. Carhart.
143 Typhoid Fever. A. H. Lindsay.
144 Spectacles—Their Use and Abuse. Joseph A. White.
145 Transperitoneal Ureterolithotomy. Report of a Case in Which the Stone Was Located by the X-ray. George N. J. Sommers.
146 Bullet in Hip Joint Located by X-ray. C. D. Harrington.
147 Enuresis in Children. G. W. B. Swain.

Southern Practitioner (Nashville, Tenn.), March.

148 The Cystoscope in the Diagnosis of Diseases of the Genito-urinary Tract. J. W. Handly.
149 Quick Removal of Tape-worm—"Tenia Solium." A. J. Weldon.
150 A Case of Chronic Rheumatism. L. B. Smith.
151 Report of a Case of Typhoid Fever with Complications. J. T. Abston.

Carolina Medical Journal (Charlotte, N. C.), February.

152 Movable Kidney. R. L. Payne.
153 Movable Liver and Its Clinical Significance. W. O. Nisbet.
154 Purulent Otitis Media—Its Causes, Complications and Treatment. B. R. Kennon.
155 Report of a Case of Pylorectomy for Carcinoma. Stuart McGuire.

Alabama Medical Journal (Birmingham), February.

156 Lacerations of the Perineum. R. P. Huger.
157 Suppurative Pleurisy Splenic Myelogenic Leukemia. B. L. Wyman.
158 Movable Kidney. U. J. W. Peters.

AMERICAN.

1. **Yellow Fever.**—Carter thinks that the incubation period of yellow fever may be ranged between three and nine days, the shortest recorded in his notes being three days and the longest eight and one-fourth. He does not claim that cases of longer or shorter incubation may not occur, but the above limitations apparently include the average.

2. **Bottini's Operation.**—Bangs gives his experience with the Bottini operation, claiming that it cures or improves a large proportion of cases without serious risk and with the minimum of detention. The patient should be prepared for this operation as carefully and thoroughly as for any other, and the anesthetic should be chosen with judgment. Local anesthesia is usually accompanied with more or less pain during the operation. One symptom that follows the operation is frequent urination, and fever is a condition also to be expected. The post-operative period is more nearly three weeks than two. Some patients may be allowed to sit up at the end of a week, but should not resume their ordinary mode of life for at least two weeks. The after-treatment is as important as any part of the operation. Incontinence of urine has followed two of his cases. He reports a case and calls attention to the following points of technique which it has taught him: "1. That the flow of electricity must be maintained to a degree which will keep the blade at white heat. 2. That in measuring a given case for the length of the incisions, allowance must be made for the action of the galvanic cautery beyond the distance at which the knife shall actually penetrate. 3. That the operation must be done with great slowness, in order to prevent hemorrhage and to get the best results."

3. **Gastric Ulceration.**—After a review of the history of the operation for gastric ulceration. Heineman discusses the pathology, and the etiology, in regard to which point he discredits the hyperacidity theory, the clinical history, differential diagnosis, and prognosis. He believes that medical treatment should be tried unless the hemorrhages are repeated and a count of red blood globules shows a serious diminution in their number. It should include absolute physical rest of body and stomach, alimentation being exclusively rectal for three or four weeks. The surgical treatment, however, should be thought of and preparations made for it if necessary. The method of procedure of Cazin promises the best results; inversion of the gastric mucous membrane, careful absorption of the mucous by means of sterilized gauze and minute search for the seat of ulceration should be made.

4. **Acute Serofibrinous Pleurisy.**—Nammack thinks that perhaps we have gone too far in our fearlessness of tapping for pleurisy. He has been in the habit of teaching, in his clinics, that chest-tapping should be performed for serofibrinous pleurisy for three indications: 1. When life is directly threatened or endangered by asphyxia from compression, or by cardiac weakness. 2. When fluid has arisen to the third interspace in front, since we find that effusions of this size rarely disappear spontaneously. 3. In all lesser effusions when spontaneous absorption is unduly delayed. When these are not present we should think more of medical treatment, including local applications of guaiacol, or iodin when guaiacol has a too pronounced effect on the heat-regulating and vasomotor centers; mild cathartics, limitation of ingested liquids, and the consumption of as much table salt as the patient can be induced to take. While there are other conditions than the effusion in connection with pleurisy, this is the special point referred to here.

5. **Urinary Hemorrhage.**—Wiener discusses the subject of blood in the urine, with special reference to the diagnosis of its source, and gives a tabulated statement of the symptoms of hematuria from its pathologic conditions. In case of urethral hemorrhage it will continue without regard to the act of urination. If the hemorrhage is from the prostate, it usually occurs in middle to old age. The symptoms are absent in the early stages, the frequency of urination is increased both day and night, pain is usually absent, the clot usually precedes a free flow of blood, the condition is somewhat relieved by rest and there is usually cystitis with later pyelonephritis. If due to stone in the bladder, it occurs usually in childhood or adult life. The urination is involuntarily arrested; the symptoms are those of cystitis. The urination is markedly increased during the day, and there is pain in the glans, even after urination. The bleeding is most profuse at night and is much relieved by rest. The other organs are usually normal. If from vesical tuberculosis, it generally occurs in early life. The urination is voluntarily arrested, pain in the glans ceases after urination, the frequency is increased both day and night and not relieved by rest. The blood is bright, and is sudden in its appearance. The bleeding is transitory; usually a few drops at night. The prostate, seminal vesicle and epididymis are often involved in the general disease. If from tumor of the bladder, it occurs usually at an advanced age, symptoms are often absent, frequency of urination may not be increased, pain is unusual, bleeding is intermittent, often nocturnal and profuse. It is not influenced by rest and occurs mostly at the end of urination. The other organs are usually normal. Stone in the kidney usually occurs in adults about 40 years of age. Pyelitis is a late complication. Urination is relieved by rest, and is increased by exercise. Severe repeated colics occur. The bleeding is rarely profuse, may appear and disappear suddenly and is almost completely precipitated on standing. In the case of tuberculosis of the kidney, the patient is usually a young adult in poor general condition. The frequency of urination is marked both day and night; severe pain is felt, bleeding may be absent for long periods, and is usually of slight amount. It is not influenced by rest. The blood is intimately mixed in the urine and not completely precipitated. Pyelitis exists, spreading to the ureter and bladder. In case of tumor of the kidney, carcinoma is the type in advanced age; sarcoma may occur early. The symptoms are those of abdominal tumor. The frequency of urination is not markedly increased. Renal colic due to clot in the ureter is a symptom. The bleeding is profuse, often most at night and is not relieved by rest. The blood is very intimately mixed in the urine and not completely precipitated. The other organs are generally normal. The conditions that may lead to error in diagnosis are hemoglobinuria, drug intoxication from turpentine, carbolic acid, sulphonal, etc.; certain kinds of foods may cause hematuria, such as rhubarb, strawberries, and gooseberries, and the menstrual blood may some times get into the urine and cause errors of diagnosis. Hemoglobinuria may be readily recognized by the color, or absence of blood cells. The spectroscope may be of use, showing the characteristic dark bands between the Fraunhofer lines D and E. Wiener thinks that perhaps we are too prone in this age to lay aside old methods for new ones, and the object of his paper is to show how, in many cases, the diagnosis may be made out without the use of complicated apparatus.

8. **Ichthyol.**—Slevin recommends the following formula to be applied by rubbing upon the inflamed parts:

R. Ichthyol ..... gr. 45
Lead Iodid ..... gr. 45
Ammonium chlorid ..... gr. 10
Petrolatum, enough to make ..... 1 ounce

He reports three cases of inflammatory diseases in which it was applied with benefit.

9. **Resorcin as Preservative for Suprarenal Extract.**—Resorcin has been found by Oppenheimer to prevent the putrefactive changes which take place in suprarenal extract on account of the large amount of animal matter present and at the same time does not impair its efficiency. It has been his habit to add 60 gr. of good dessiccated extract to one ounce of a 1 per cent. resorcin solution. The quantity for daily use is filtered, and he finds that as a hemostatic and vasomotor constrictor this combination is of great service.

10. **Malignant Disease of the Larynx.**—Thyreotomy, by Prof. J. N. Mackenzie's new operation, is questioned by Waggett as not yet having been sufficiently tried to justify all the claims that are made in its favor. The methods at present employed by Semon, Butlin, and others have yielded such brilliant results that he thinks it is absurd to sweep it aside as discredited.

11. **Turbinotomy.**—Boylan has operated in sixty-four cases for removal of the lower portion of the turbinated body with the cold snare. He thinks this method preferable to the use of the saw and scissors, excepting where excessive indurations indicate thickened bone. In order to meet the objection of the slipping forward of the loop over the medial surface and lower margin of the body, he fixes the end of the loop by burying the

point of a fine tenaculum, the hook of which forms a right angle, into the lower margin of the turbinated body at the point of operation, carrying the loop over its handle into the meatus, adjusting it so that it passes behind and is held in place at the back of the hook. In this way it is possible to entirely control the removal of the amount of tissue required. Amputation can be done with accuracy. Finding that the point of the hook was at times caught in the loops, he afterward had this bent to an angle somewhat more acute than a right angle, to avoid this. During the manipulation the snare should be pressed firmly backward and upward, so that the loop is drawn from above rather than from in front.

12. **Pseudocyesis and Myxedema.**—Noticing first the occasional difficulty of recognizing the genuine condition and the medicolegal importance of spurious pregnancy, Davis reports several cases of the latter condition, one of them a neurotic patient apparently recovered from myxedema.

13. **Morphin.**—Reichert reports experiments on the action of morphin on heat production, heat dissipation and body temperature, with special reference to the effect of the depression produced by the drug upon the internal secretions. He claims that the profound depression of general metabolism thus produced by even non-fatal doses, together with the probable involvement of the processes concerned in the internal secretions and in repair and their consequent affection, may be considered among the important factors in the question of the treatment of morphin poisoning, and that probably future research will show that we have in this depression an agent in explaining a part at least of the play of certain physiologic antidotes, as well as the non-effectiveness of others, such at atropin, which on theoretical ground would be supposed to be effective. Also, if a means be found to restore the normal processes of secretion and repair, the counteraction of the direct action of morphin upon the metabolic process as well as the respiration will probably be accomplished with less difficulty than heretofore.

14. **Paresis Simulating Brain Tumor.**—Sinkler reports a couple of cases in which the symptoms strongly indicated brain tumors in the earlier phases of the disease, the patient later becoming clearly a paretic. He calls attention to these facts as indicating possible errors of diagnosis in early paresis.

19. **Albuminous Nutrition.**—Bernheim's article is largely the notice of an article by Finkler, who describes a form of albumin food which can be given in many conditions where a special food is required. He gives its advantages as follows: This food is an almost chemically pure albumin of animal and vegetable origin in the average proportion of normal daily diet. It is a slightly brownish powder, odorless and tasteless. It is sterile and can be kept for any length of time, with no deterioration. The plain preparation is not soluble in water, but is readily accessible to the secretory juices of the alimentary apparatus. The iron mixture is soluble. It is resorbable to an extent of more than 90 per cent. of its weight when taken into the body. It can be eaten with food, by itself, or added and mixed with any other food, without changing the taste or flavor. On account of its high degree of resorbability, it is an exceedingly cheap proteid food for the sick as well as the healthy, and must become an ideal albuminous nourishment for the soldier and travellers on account of its small bulk and absolute digestibility. It gives excellent results in all cases of mal-nutrition from insanity, anemia, consumption, gastric and intestinal diseases, acute infection, in convalescence and in all cases of disturbed metabolism. Though insoluble in water, it does not lose any of its good qualities and is preferable to soluble and predigested foods in most cases. He thinks that it is the food of the future, like other artificially manufactured foods, when the population has increased to such a degree that the necessities of life will have to be manufactured. He gives his experience with this albuminous food in cases of healthy persons, and also in invalids.

21. **The Consumptive Poor.**—Knopf's paper is a plea for the sanitarium treatment of the consumptive poor.

22. **Pericystitic Strands.**—While examining patients with the cystoscope, Bierhoff's attention was called to a change similar to columnated structure of the bladder, but differing from it in that it occurred in limited portions of the bladder wall and in female patients who had not suffered from any obstruction to urination, but had in most cases at some previous period suffered from parametritis or allied conditions. Following the suggestion of Dr. Knorr, he examined all cases with previous history of such uterine conditions, as to their vesical symptoms. Of 443 cases, histories of parametritis, etc., were obtainable in 214; symptoms referable to urinary organs in 264; pericystic strands present in 136; no other discoverable cause of symptoms than perivesical changes in 8; perivesical changes, as accessory cause in 67. These pericystitic strands, imitating in some respects the columnated structure of the bladder, are, according to the author, due to uterine inflammations, which extend and involve the walls of the bladder, and the fibrinous strands resulting from the organization and contraction of the inflammatory exudate, pull upon parts of the bladder wall. The characteristic appearance is the presence, over parts of these walls, of sharp, scar-like formations which rise, to a greater or less extent, above the surrounding surface, having a yellowish-white color, and tend to fimbriate at the end. Besides the columnar bladder structures, the contractions of the bladder muscle might be confused with these, but when these occur they appear and then disappear over the entire field of vision and are thus differentiated from the condition described. The recent cases can be treated by measures to promote resorption of the exudate. The later changes are of interest chiefly because they may exert an influence as complicating factors or disturbances of urination or produce vesical hyperesthesia.

23. **The Prevention of Insanity.**—The principal points in Coe's article are the regulation, under medical advice, of marriage and reproduction by persons who have strong family taints of insanity, and the proper education and regulation of life in such cases.

24. **The Tonometer.**—Shaw considers Gaertner's tonometer as a valuable method of ascertaining the degree of blood pressure. The description of the instrument and its use was given in an earlier paper by the author abstracted in THE JOURNAL vol. xxxiv p. 415 from the *Medical Record* Feb. 3, 1900.

27. **Carcinoma of the Extremity of the Common Bile Duct.**—After reporting a case of carcinoma involving the end of the common duct, with autopsy, Edes discusses the frequency of these conditions. He thinks that undoubtedly they are more common than often supposed, and quotes the references in the Index Catalogue in support of this view. He thinks that while probably gall-stones play an important part in the etiology of carcinoma of the gall-bladder, we must look elsewhere for the local irritation necessary to set up the same growth in the ducts. The diagnosis is not entirely certain or satisfactory, but is not absolutely impossible. The important point is to determine the exact location of the growth and this can not be done without operation. The possibility of relief by operation is noticed, but the prospects are apparently not usually encouraging by the time the diagnosis is established.

28. **Diphtheria Diagnosis.**—Methods in the Boston Board of Health's pathologic laboratory are described by Hill. A summary of the examinations is given in a tabulated form, and the interpretation of results detailed. The presence of diphtheria bacilli is used as a sort of toxin indicator and the positive diagnosis based upon it. The meaning of the negative report, however, was not considered absolute, and a "no growth" report was used when for any technical reason the examination of the cultures was a failure. He found diphtheria bacilli in about 60 to 70 per cent. of cases clinically designated as diphtheria, and in about 10 or 11 per cent. of those diagnosed as non-diphtheria. The positive report from swab examinations was of the same significance as the positive one from cultures, while the negative report is absolutely meaningless. Since, however, the positive swab results save from fifteen to twenty-four hours of waiting for the results of cultures, it was worth while to employ it even if positive results could only be obtained in 50 per cent. of the cases. The release from isola-

tion in diphtheria is a matter not so easy of decision. It was found that release on one negative culture allowed 30 per cent. of the patients to go out of isolation, while the bacteria are still present, while with two or more consecutive negative cultures only about 1 to 3 per cent. of those released will be still infected. To make sure of absolute non-infection by requiring three consecutive cultures involved so much additional trouble that it was found impracticable.

30. **Infantile Convulsions.**—From the records of the Boston Children's Hospital, Bullard and Townsend find that 1 per cent. of the children applying for treatment came for convulsions; 10 per cent. between 5 and 12 years of age gave a history of convulsions. Cases that appear to be due to some manifest reflex cause may turn out to be true epilepsy. Other cases, where the attacks occur frequently and without apparent cause, may suddenly recover, at least for a considerable period. Children who have had convulsions may be strong and free from nervous tendencies, though the proportion of those who have such nervous tendencies seems to be greater than in those who have not had convulsions.

35.—See abstract in THE JOURNAL xxxv, p. 1048.

38. **Adenoids.**—The occasional failure of the disappearance of unpleasant symptoms due to adenoids after their removal, is remarked upon by Huber, who enumerates the possible causes of mouth breathing, such as diphtheria, nasal catarrh, foreign bodies, inflammatory conditions in the nose, traumas, neoplasms, etc. The methods he suggests in these cases are examination for nasal obstruction, the use of boric acid, operation for deflected septum, curetting, and teaching the children to breathe through their noses.

44. **Paralysis Agitans.**—In the conclusion of his paper Taylor says: "I feel myself warranted in expressing the conviction that in most forms of tremor, whatsoever their cause, we may hope to obtain fair amelioration of symptoms, and it may be in some instances, a cure, by carefully regulated and systematized movements. These should be such as shall re-establish the largest degree of elasticity in the tissues which have suffered contractures. They should always include passive extensions and flexions, followed by active repetitions of these acts. The most important movements to overcome the milder forms of tremor, as the senile form, are slow, full forcible extensions. An important part of the treatment is the attainment of normal attitudes. Along with this should be continued conscientious efforts on the part of the patient to acquire full thoracic capacity, and as much elasticity of the lungs as possible. To regain and maintain health and activity in chronic conditions of almost any sort, is conditional upon a fair respiratory capacity constantly exercised."

51. **Chronic Maxillary Empyema.**—Winslow reviews the opinions of authorities, reports cases of antral empyema, and emphasizes the following points: 1. That antral empyema is not only not always, but is not generally, due to dental disease, the contrary view being based upon clinical rather than anatomical observation. 2. Its frequency and the necessity for systematic examination by multiple proof-puncture in suspected cases; latent empyema would thus not be allowed to exist until it makes itself manifest by caries and the apparent causal relation between the two would become much less notable. 3. Unless evidently of dental origin, antral empyema should be treated through the nose until it is certain that complications exist, and we then should investigate through a large opening in the facial wall. 4. The alveolar opening should be reserved for those cases of undoubted dental origin, and for those who refuse the radical operation. Even then the cases should not be referred entirely to the dentist, for they usually take no account of nasal conditions.

60. **Gastric Carcinoma.**—McCaskey reviews the methods of diagnosis of gastric carcinoma with a view to its early operation. The chief symptoms are anorexia, vomiting, pain, hemorrhage and obstinate constipation. However, these are not all constant. The condition of the blood is not different from that of any other serious nutritional disease. Peptonuria, if suppurative processes are to be excluded, is of decided value as indicating the absorption of peptones from an ulcerated surface in the gastro-intestinal tract. He mentions his cardiameter, described before, by which he can determine the presence or absence of ptosis or ectasia. Of the chemical and microscopic signs, the absence of HCl has been proven to be a non-characteristic symptom. Lactic acid has also no pathognomonic significance. Microscopic evidences, however, are of great value, and may be obtained from washings of the fasting stomach or by using the stomach-tube as a sort of curette. Atypical mitosis at present is not regarded as absolutely significant, though especially frequent. Motor insufficiency of the stomach is finally mentioned as evidence of the continued presence of partially digested foods, is pretty constantly present in the early stages of the disease and has been called by Einhorn ischochymia, which is a convenient designation. After the increase of ischochymia, with malnutrition, progressive diminution of free HCl and of peptic digestion, with perhaps the addition of pain, the presence of lactic acid and the Oppler-Boas bacillus with atypical mitosis appear to be the most reliable signs at present available. The early diagnosis of gastric carcinoma is one of the most difficult problems to the clinician.

62.—See abstract in THE JOURNAL, xxxv, p. 1171.

63.—Ibid.

64.—Ibid.

68. **Some Mistaken Impressions in Regard to Genito-Urinary Troubles.**—The special mistakes noticed by Dowd are: the belief in the frequency of cystitis due to gonorrhea, the frequency of vaginitis, the recognition of albuminuria and casts as always indicating nephritis, while they occur frequently during urethral inflammation with no other disease, and the common notion of the greater seriousness of syphilis as compared with gonorrhea; he also mentions the common belief that twisting or screw-like formation of urination as it emerges is indicative of stricture, which is not the case.

76. **Bacteriology of the Conjunctival Sac.**—From a review of the principal points of his paper, Jameson sums up: 1. Pyogenic organisms are found in the normal conjunctival secretion, but probably in an attenuated form. 2. Under normal conditions these do not propagate. 3. The normal eye is abundantly supplied with means of antagonizing bacterial growth. 4 Diminished resistance from inflammations and operative interference alter the secretion and probably convert it into a better media for germ life. 5. The secretion of the eye is not in itself antiseptic. 6. Strong antiseptics in the conjunctival sac lower the resistance to germ in vision. 7. Much attention should be given to washing out the residual bacteria prior to operation. 8. As much care should be taken concerning antisepsis and cleanliness in the external preparation of both patient and operator as is adopted in general surgery, as, while the danger of suppuration is more remote, its results would be more disastrous.

77. **Choroidal Sarcomas.**—Posey and Shumway report a case in which they call attention to the following points as of interest: 1. The form of growth—intravascular angiosarcoma—developing from the lining endothelial cells of the choroidal vessels. 2. The early appearance of the glaucomatous phenomena. 3. The marked inflammatory changes and hyaline degeneration of the iris and ciliary body. 4. Acute degeneration of the optic nerve. 5. The advanced age of the patient—70 years.

78. **Homatropin.**—From his experience Jackson concludes that homatropin properly used is a reliable and satisfactory cycloplegic, as effective in children as in adults. The preferred method of applying it is in 2.5 or 3 per cent. solution, a small drop on the upper corneal margin every five minutes until five or six drops have been instilled. Care should be taken to avoid irritation. It rarely produces any symptoms of mydriatic intoxication. The bitter taste is the most notable extraocular symptom.

79. **Vernal Conjunctivitis.**—Fox reports a case of this type of conjunctival inflammation which he treated by grattage with success.

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80. **Asthenopia.**—The causes of asthenopia are noticed by Schulin, and among the first he mentions auto-intoxication from the bowels, etc., and after that common rheumatic gouty diathesis. Another cause is sexual disorders, and he mentions cases due to gonorrhea and undescended testicles. One of the most frequent causes is a poorly-darkened sleeping room, especially if the sleeping, from any cause, is not profound. The surroundings of the eye in sleep, especially in young children, deserve great attention. He does not put much faith in the poorly-lighted schoolroom as a cause of asthenopia. What trouble comes from this cause is due to twisting of the vision due to narrow, bright windows. He believes that astigmatism and myopia are not as a rule congenital, but originate in early youth, are binocular in origin, being caused by abnormalities of muscles of both eyes, and that these originate mostly in the night time, during sleep.

81. **Obliterating Hyphema.**—Four cases are reported by Weymann, from which he concludes that contusions of the eyeball, resulting in obliterating hyphema, may or may not be complicated with deeper mischief, but the uncomplicated cases are in the minority. They are apt to be followed by acute glaucoma, the chief cause of the suffering. In the absence of sepsis iritis seldom develops. When the contusing force secures non-infected drainage from the anterior chamber, the reaction subsides in six to twelve hours. The stippling of the anterior epithelium and parenchymatous haze are due chiefly to profound shock to the local lymph-system and clouding does not disappear with the irritation of the intraocular pressure; it often lasts a week or longer. Drawing the contused blood is neither practicable nor desirable, for it clots a few minutes after leaving the vessels, and it shuts off the light and serves as a quasi iris splint. Atropia should always be instilled, not only for dilatation, but for its analgesic effect. Glaucomatous tension should be at once relieved by a cataract knife into the anterior chamber parallel to the plane of the iris. This makes a valvular wound which can be opened at will by compression of the posterior wound lip. For the inflammation he orders 6 gr. of calomel, which has an excellent revulsive effect, and compresses, as hot as can be borne, for thirty minutes out of every hour. These are usually not needed after twenty-four to forty-eight hours, at least not so often. No prognostic promises should be made until the clot absorption is complete. The commonest deeper complications are partial or thorough luxations of the lens, consecutive cataract, iridodialysis, synsechiæ, fundus hemorrhage and detachment of the retina.

88. **Pseudo-phosphaturia as the Cause of Persistent Urethritis.**—Schalek reports a case in which a non-specific urethritis, persisting for years in spite of all local treatment, was relieved when the condition of the urine was detected and proper treatment instituted. The nearest resemblance which he finds to the present case was in one reported by Klotz, where, after the cure of gonorrhea, in which repeated examinations failed to find the germs, phosphaturia brought on anew an inflammation of the bladder and urethra. The condition in Schalek's patient is called pseudo-phosphaturia, as no excess of phosphates was present, but it still had the general symptoms of phosphaturia.

89.—See abstract in THE JOURNAL of January 12, p. 126.

90.—**Septic Affections of the Kidneys.**—The methods of treating over-alkaline acidity of the urine are first noticed by McArthur, who calls attention to the importance of using benzoic acid, free from an alkaline base, in the treatment of ammoniacal urine. Other remedies useful in acidulating urine and exceeding in value dilute mineral acids are salol and similar derivatives of the benzol group. To check bacterial growth, the most trustworthy urinary antiseptic is urotropin. To render the urine alkaline in reaction, as when the gonococci or bacilli coli invades the kidney, the bicarbonates should not be used. Of the neutral salts the vegetable acids are the best. He classifies the specific affections of the kidney into acute and chronic, and those again into ascending and hematogenous, or descending. The acute ascending infections of the kidney are septic and gonorrheal, and for treatment the better antiseptics mentioned should be used. If these fail, the use of ureteral lavage, and if this also fails there remains nephrostomy as a final resource. The descending infection of the kidney is occasional and may be from pyemic infarcts, but is more frequently due to infection from typhoid and tuberculosis. As a positive causative factor in chronic ascending infection, we have the same micro-organisms as in the acute, but their invasion is generally due to some mechanical obstruction to the free escape of urine, and attention should be given to its removal. With the restoration of free exit, many a case of renal infection has become quiescent. Relief of prostatic hypertrophy or stricture may cause the kidney trouble to disappear. If the renal obstruction has become so great that the removal of the kidney is required, the functional activity of the other kidney and its freedom from disease should be assured, as well as the worthless character of the kidney to be removed. Among the chronic descending, i. e., the hematogenous, varieties we have chiefly the caseous nodules of chronic tuberculous processes.

99. **Urethral Curettage.**—Walker favors the use of a special curette, which is very long and slender, with a rather cup-shaped end 2 mm. in diameter and very sharp, in curetting for posterior urethritis; he has had good success in long-standing cases. Preparatory to the operation he irrigates thoroughly with a 1 to 40,000 bichlorid solution, and then a 4 per cent. cocain solution, which is instilled and held five minutes. The endoscope is introduced and the diseased spot localized. The curette is next applied with the complete removal of diseased tissue, including the epithelial layer and submucous tissue, if necessary. After this is done a 10 per cent. solution of nitrate of silver is applied to the spot by means of a cotton pledget. Following the treatment there is usually profuse purulent discharge, for which he has used, twice daily, an irrigation of 1 to 50,000 bichlorid solution.

106.—This paper was considered editorially in last week's JOURNAL.

111. **Stereoagnosis.**—Two cases are reported by Burr, whose conclusions are as follows: The ability to recognize objects by handling them depends upon the integrity of the afferent nerves, the cortical sensory area, and the cortical perceptive area. Diseases of either of these will affect the function. We may dismiss from consideration the inability to recognize objects because of disease of the sensory nerves or tracts in the cord, medulla and pons. Such inability is due to anesthesias of one or more types. There is a distinct area in which the sensations of handling objects are grouped, which form tactile memory impressions. This, the tactile perceptive area, is in the parietal lobe. This is not the same thing as the sensory area, though it may be located within the boundaries of the latter. It would probably be well to limit the term stereoagnosis to cases where the inability to recognize objects by contact is due to some failure of sensation caused by brain disease either in the cortical sensory area itself or in the fibers going to it. Tactile amnesia includes cases in which, on account of disease in the tactile perceptive area, the tactile memory images are destroyed. It is not infrequently associated with mind blindness, and it is probable that in recognizing objects by handling we recall, from memory, a more or less faint recollection of its visual appearance. Auditory memories are less frequently recalled because less frequently needed. What form of sensation is the most necessary for the recognition of any given object depends on its qualities. Tactile anesthesia, if sensibility to stronger pressure is preserved, causes little or no difficulty. The space sense, the localizing sense, and the sense of position are probably the most important, for by them we learn the form of objects. When, in the cerebral palsies of children, there is an inability to recognize objects in the paralyzed hand, it is often due, as Oppenheim states, to the fact that tactile memory images were never acquired. Granting that the tactile perceptive area is not the same as the cortical sensory area, such cases as the second reported can be explained upon the hypothesis of a lesion cutting off the fibers joining the two areas.

117. **Foreign Bodies in the Peritoneum.**—Beck reports cases in which non-absorptive silk ligature was sloughed through into the bowel or bladder or other hollow organ of the body, and he concludes that silk ligatures and sutures are not as harmless as usually regarded, and that more absorptive material should be preferred. If non-absorptive silk material is used, the thread should be small in size, and interrupted suture should be preferred to the continuous one, as the latter takes a longer time to slough off. Symptoms arising from a buried suture must always be borne in mind, and if sloughing is suspected a way should be opened for the thread so that it may not take a dangerous route. Some of the cases show that even the absorptive sutures are liable to this accident.

120. **Pryor's Vaginal Hysterectomy.**—Crouse reviews the indications for the operation and describes the technique. Pryor's operation, he says, has been evolved from Doyen's anterior hemisection, Muller-Quenu's total hemisection, Segond-Pean's preliminary liberation of the uterus, thus guarding the ureter, Czerny's twisting of the pedicle to 180 degrees, with the placing of the forceps from above downward. It embodies careful covering of the stump, thus securing the extraperitoneal retention of the pedicles; it is the Pean morcellating method in fibroids and large uteri. But after all, it is Pryor's, and an American operation by an American operator. The mortality in Pryor's hands has been *nil*. Its advantages over the other vaginal procedures are: 1. No stitches nor ligatures, and increased speed and ease. 2. The use of clamps which can be applied to dense, short ligaments where ligatures are not applicable, as in cases in which the parametria are very much thickened. Clamps can be placed closer to the outer part of the broad ligament if this is at all infiltrated, than it is possible to place ligatures. 3. It has all of their good and none of their bad features.

140. **Protonuclein.**—Canan has attempted to classify his cases of tuberculosis, keeping a record of all that were treated with protonuclein. The classification adopted was that of circumscribed apyrexia, circumscribed febrile tuberculosis, tubercular laryngitis, tubercular broncho-pulmonitis, and tubercular broncho-pulmonitis with cavities. In each case the bacilli were found. The patients were from all walks of life, between the ages of 60 and 70 years, and of both sexes. Of the apyrexia cases, 39 were treated, and 5 were cured, 18 improved, 9 remained about the same, and 7 grew worse and died. Of the tubercular laryngitis cases, 27 were treated, 3 cured, 12 improved, 6 stationary, and 6 died. Of the circumscribed febrile, 32 were treated, 8 cured, 16 improved, 5 stationary, and 3 died. Twenty-one cases of tubercular broncho-pneumonia with cavities were treated, 4 cured, 10 improved, 3 remained stationary, and 4 died. He claims that this treatment, while not a specific for tuberculosis, can do very much good and save many lives. There is no danger of its dealing the last blow to an already tottering structure, as is so often the case with tuberculin. While the treatment was in progress, he noticed: 1. That pyogenic associations are not acted upon by protonuclein. 2. That negative results are manifested when administered to patients with disease so far advanced that the cells are unable to respond to the stimulus of the drug. 3. That when improvement once begins under this treatment it generally continues. He reports one case in which cavitation had occurred, and improvement was very striking.

Combined Gynecologic Operations.—Owing to a combination of errors in typewriting and proofreading, the notice of Sutton's article, "Combined Gynecologic Operations" (page 599, THE JOURNAL, March 2), contained two absurd errors: For "tracheotomy," read trachelorrhaphy, and for "craniotomy," laparotomy.

FOREIGN.

British Medical Journal, March 2.

Some Points Relating to Varicocele. WILLIAM H. BENNETT.—The writer notices the hypochondriasis and mental symptoms generally as occurring with varicocele, and describes its varieties. About 7 per cent. of men will be found to suffer from this condition, and 80 per cent. of that percentage will be affected on the left side only, about 15 per cent. on both sides, while occasionally the right side only is affected. The percentage of cases in which it gives trouble, excepting from mental causes, is small, and quack literature is responsible for many of these latter. He recognizes two forms, in one of which the condition appears like a bag of worms, and this is the commonest type. Excepting in cases of injury, it is perfectly harmless. There is another kind, however, where the veins are very small and massed together, and very numerous around the testicle, the upper part of the cord being normal. This kind may produce trouble in the way of atrophy of the testicle, influencing of nutrition, the result of abnormal growth of the veins. For the relief of the condition radical operation is advisable, and the method that he follows is a complete division of the whole of the spermatic cord, with the exception of the vas deferens. He has performed this operation more than two hundred times. It is the best method for preventing recurrence of the condition. He makes an incision of one-half to three-quarters of an inch, severs the cord on a level with the upper border of the root of the penis, i. e., over the external abdominal ring, and pulls out the whole of the spermatic cord excepting the vas deferens, by means of an aneurysm needle or hook, which is passed between the vas deferens and the rest of the cord. The veins here are not dilated—an essential point—and are only seen through the translucent fascia; inside the fascia, with the veins, is generally the spermatic artery. He pulls the loop out through the wound, the next step being to tie a stout ligature of carbolized catgut around it in two places. A considerable piece is excised and the two stumps are united by a kangaroo or catgut suture, considerable structure having been removed. He intentionally includes a segment of the spermatic artery in the removed section, and claims that the vessels which accompany the vas deferens, together with a few small vessels derived from the subvaginal cellular tissue, are sufficient to nourish the testicle. When he first began to perform the operation, he feared wasting of the organ, but this has not followed. The spermatic artery is a large vessel for the work it performs, and is enlarged still more in varicocele. If it is left there would be engorgement of the organ for the time being, which might lead to fatty degeneration. On the other hand, if the main artery is obliterated, the blood carried by the artery of the vas deferens and other small arteries is sufficient to nourish the testicle without producing engorgement.

Influence of the Dwelling upon Health. JOHN F. J. SYKES.—The question of the influence of the dwelling upon health is discussed by Sykes, who finds the increased density to the square space causes an increased general and special mortality in unsanitary areas. The general mortality is increased at all ages, but particularly under one year. The special mortality shows the greatest increase in infectious diseases, the next greatest in tuberculous diseases, the next in respiratory disorders. If all infectious cases be promptly removed to hospitals, and disinfection and cleanliness enforced, the increase will take place in the reverse order, the respiratory diseases first, the tuberculous next, and the infectious third. In a series of industries arranged in order of the purity of the air considered apart from dusty occupations, the order would be that of the mortality of diseases of the respiratory organs together with phthisis. The greater proportion of the diminution in phthisis mortality among females, the more indoor of the two sexes, is significant of improvement of dwellings, and it is more notable since the greater diminution has taken place between the ages of 15 and 45 years, the child-bearing period, when women are most sedentary. The size of the dwelling has an influence on the mortality. The mortality in dwellings of one room may be nearly double that of larger dwellings, and this is especially noticeable in tuberculous disease. The most important factor in the spread of pulmonary tuberculosis is the predisposition to this condition, acquired as well as innate. Moreover, the acquired or innate predisposition can be controlled to a large extent by the hygienic conditions. The phthisis death-rate shows a close relationship to the density of persons in cubic space, and the disease seems to stand in the same relationship to respiratory pollution as typhoid does to

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filth pollution. The effects of back-to-back houses, as constructed in the north of England, are also stated, and in such the death-rates from all causes are greatly increased. The death-rate in dwellings over stables is also specially noticed, and the conclusions are that occupants of these have a high birth-rate and high mortality under 1 year and at all ages; high death-rates from pulmonary disease, both in infants and adults, and high in zymotic diseases, especially diarrhea and diphtheria. Much of this is attributable to drafty conditions of stables affecting the dwellings over them.

The Lancet, March 2.

Influence of Ozone on the Vitality of Some Pathogenic and Other Bacteria. ARTHUR RANSOME AND ALEXANDER G. R. FOULERTON.—These authors have experimented on the action of ozone: 1. On the vitality of certain pathogenic and saprophytic bacteria. 2. On the virulence of bacilli of tuberculosis. They detail their experiments, referring to former workers, especially Downs, Blunt and Ohlmüller, and conclude that ozone in the dried state, and in such strength as used, has no appreciable action on the vitality of the various bacilli experimented with, their results being in accordance with those of Sonntag and Ohlmüller, nor did prolonged exposure to the action of ozone diminish in any way the pathogenic virulence of the bacilli of tuberculosis in the sputum. Single experiments appear to show that it has little if any effect on the pathogenic virulence of the bacillus mallei and the bacillus anthracis. On the other hand, one experiment appears to confirm the conclusion arrived at by Ohlmüller, as to the bactericidal properties of ozone when passed through a fluid medium containing bacilli in suspension. The non-activity of ozone as a disinfectant in the dried state, compared with its action in the presence of water, suggests a superficial resemblance to other gases, such as chlorin and sulphur dioxid. The authors, therefore, consider that in the dry state and under natural conditions ozone has no effect on the bacteria, and any purifying action which it may have in the economy of Nature is due to chemical oxidation of putrescible organic material, and it does not hinder the action of bacteria which are working toward the same thing in their own way.

Quantitative Estimation of Bactericidal Power of Blood. A. E. WRIGHT.—In a previous communication dealing with the quantitative diminution of the bactericidal power of the blood, Wright described the technique of the method, by using a series of graduated dilutions of serum mixed in capillary culture-tubes, with equal volumes of liquefied gelatin and cultures containing in suspension the proportionate number of species of micro-organisms to be tested. The questions considered in the present communication are whether, where no colonies are developed in these cultures, it may be inferred that the bactericidal effect has been complete and the question of the influence exerted on the results of the quantitative estimation of the bactericidal power by the greater or smaller number of bacilli in the volume of culture brought in contact with the serum. The experiments undertaken to answer these questions are detailed and methods described. The conclusions the author reaches is that what was measured by the method described in his former article is rather the total antibacterial power of the blood than the bactericidal power proper. Where it is desired separately to estimate the bactericidal power, this can be done by making a series of graduated dilutions of bacterial cultures and growths, and by mixing, in the manner described in the present communication, one volume of each of these with one volume of undiluted, or, if necessary, diluted serum. When this last method is employed, and the bacteria in the cultures have been enumerated in the manner indicated, a convenient arithmetical expression for the bactericidal power is obtained by the specific number of micro-organisms, which 1 c. mm. of serum is capable of killing. Where—as in the case of the staphylococcus and apparently also in the case of the streptococcus and bacillus of plague—we have to deal with bacteria which are not killed off, or are killed off only in small numbers, by the normal human blood, or, again, where we are dealing with conditions (such as those frequently met with in convalescents from typhoid) when the blood has lost much of its normal bactericidal power, the gelatin method, measuring as it does the combined inhibitory and bactericidal power, may appropriately come into application.

Method of Distinguishing Bacillus Coli Communis from Bacillus Typhosus by the Use of Neutral Red. WILLIAM HUNTER.—The author finds, from his studies of the subject, that: 1. The bacillus coli communis possesses to a marked degree the power of reducing neutral red, producing a superb canary-yellow, fluorescent color of the medium. 2. The so-called bacillus enteritidis of Gaertner also produces this reaction, and is probably only a variety of bacillus coli communis. 3. The bacillus typhosus never possesses this power of reduction. 4. The common pathogenic micro-organisms do not give this reaction. 5. By means of neutral red it is possible, within from twelve to twenty-four hours, to diagnose the presence of bacillus coli communis with absolute accuracy. Finally, as far as his experience goes, it is possible to diagnose, by means of neutral red, the true coli group from the typhoid group of micro-organisms.

Archives Gen. de Med. (Paris), February.

Subacute Adenitis of the Groin. MANON AND GANDY.—An adenitis in the inguinal region, remarkable for the multiplicity of the foci and the protracted course, has been described by various authors. The pus shows no micro-organisms on direct examination and no cultures can be derived from it, consequently the affection has been assumed to be a simple adenitis with intraganglionary purulent foci. The authors of this communication state, however, that it is exclusively and probably invariably tubercular and promptly heals after extirpation, curetting and packing with iodoform gauze. Animals inoculated with the pus exhibited local and general manifestations of an attenuated tuberculosis in every case. Four out of a number of clinical cases are described in detail.

Two Cases of Primary Carcinoma of Biliary Passages. LECÈNE AND PAGNIEZ.—Two new cases of primary juxtahepatic carcinoma of the biliary passages are described, and the ten cases already in the literature. They were all circumscribed but inoperable, obstructing the large biliary passages at their emergence from the liver. The symptoms were those of chronic icterus from retention.

Bulletin Medical (Paris), February 13.

Influence of Spinal Cocainization in Hastening Delivery. DOLÉRIS.—Fifty obstetric cases in which spinal cocainization was employed have convinced Doléris that cocain has a directly aggressive action in stimulating the uterine muscle to contraction. He affirms that we have in spinal cocainization a new means of inducing premature delivery, on account of this oxytocic action on the motor nerves of the uterus. It is, therefore, contra-indicated for operations during pregnancy on account of the danger of inducing abortion. He found it invaluable in two cases of uterine inertia, and suggests that it may be useful in eclampsia, in which rapid delivery is often desirable.

Gaz. Hebd. de M. et Ch. (Paris), February 17.

Mercurialized Artificial Serum in Syphilis. BAILEY.—Experiences with 70 syphilitics treated with mercurialized serum are described. The action was as energetic as that of calomel, and it was tolerated by the patients as well as grey oil, while the administration is simpler, easier and much less painful for the patient. Clinical recovery followed an average of 3½ injections. The formula is: mercuric bichlorid, 5 gm.; sodium chlorid, 2 gm.; boiling distilled water, 200 gm., and, when cooled, carbolic acid, 2 gm. Only thirteen of the 250 injections were painful. The amount injected averaged 20 c.c. during the week. Slight stomatitis was noticed in four cases.

Journ. de Physiologie (Paris), January.

Pathogenesis of Acute Edema of the Lung. J. TEISSIER.—Nervous influences favor the production of acute edema of the lung in animals by dilating the capillaries of the parenchyma. This influence is more pronounced in cases of preceding intoxication entailing a tendency to serous suffusion. The edema may occur without increased pressure in the left ventri-

cle, but never without a simultaneous increase in the pulmonary pressure.

Protecting Power of the Skin. J. LEFÈVRE.—The experiments reported seem to demonstrate that the protection afforded by the skin is the same as from a covering of wood or cork about 2 mm. thick. It protects against cold 750 times less effectively than a layer of still air 2 mm. thick, but it protects 2280 times better than a silver envelope and 1750 times better than copper. The conductibility is less by one-half at 5 than at 30 C.

Thyroid Grafts. H. CRISTIANI.—The thyroid gland transplanted whole or in portions in the peritoneum, or under the skin of an animal of the same species, lived and developed histologically, apparently the same as if it had remained in its original environment.

L' Obstetrique (Paris), January.

Vomiting of Pregnancy with Ovarian Cyst. L. LAPEYRE.—Uncontrollable vomiting does not occur in pregnancy complicated with an ovarian cyst, with any more proportionate frequency than in simple pregnancy. When it occurs it is due to the pregnancy and not to disturbance from the cyst. A case is described in which the cyst was removed in the hope of arresting the vomiting, but no relief was experienced until labor was induced. In urgent cases the patient can be delivered at once and the ablation of the cyst postponed. Certain ovarian cysts, Lapeyre adds, are better removed through the vagina, especially during the course of a pregnancy.

Revue Mens. Mal. Enf. (Paris), January and February.

Abscess of Liver from Contusion in Children. C. ODDO.—Four of the nine cases of traumatic abscess of the liver in children, collected by Oddo, terminated fatally. The symptoms sometimes appear at once after the contusion, or a period of latency may intervene. If the traumatism directly affected the liver the abscess is primary, but occasionally it occurs consecutive to injury of some other region of the abdomen. Fever may be remittent or continuous. The cachexia is rapid and pronounced. The abscess tends to perforate through the skin or into the respiratory apparatus, possibly directly into the bronchi. It may entail a purulent pleurisy and produce a subdiaphragmatic pyo-pneumothorax. Surgical or spontaneous evacuation is followed by rapid improvement.

Alterations in the Bones in Rhachitis. L. SPILLMANN.—Histologic study of the bones of forty-four children of various ages indicates that rhachitis passes through three stages in its course; latent, deformity and convalescent. In the second stage vascular neoformation is the chief lesion. The proliferation of cartilage cells and disturbances in ossification are secondary. The rhachitic process is essentially an osteitis, both juxta-epiphysial and subperiosteal.

February.

Purulent Rhinitis in Scarlet Fever. C. LAPRÉE.—A purulent coryza entailed complications which proved fatal in eighteen out of thirty-nine cases in Laprée's experience. The statistics of others also indicate that purulent coryza is the most frequent cause of death in scarlet fever. It may be preceded by a simple coryza, or may appear suddenly without warning, the second or third day, or as late as the tenth day. It usually coincides with severe sore throat and general symptoms. It aggravates the disease, keeps the temperature above 38.5 C. for several days and debilitates the patient. Treatment should be prompt and energetic, destroying the germ in the local infection before it infects the entire organism. The nasal fossæ and throat should be copiously rinsed with an antiseptic, preferably peroxid of hydrogen mixed with an equal volume of a 4 per 1000 solution of sodium bicarbonate. This irrigation should be repeated three or four times a day and at least twice at night. Afterward the nostrils are plugged with cotton impregnated with a mentholized or resorcin salve. This treatment may arrest the rhinitis in thirty-six hours, but it usually continues for three days. If the discharge persists after the fifth or sixth day, an irrigation morning and night is usually sufficient. Laprée recommends irrigation through a Nélaton sound in which three holes have been cut about the center with the scissors. The sound is inserted through the nose and passes out at the mouth.

Revue Scientifique (Paris), February 23.

Pain from the Surgical Point of View. J. LUCAS-CHAMPIONNIÈRE.—Pain causes reflexes of all kinds and may survive the cause that produced it. Pain begets pain. The longer it lasts the more obstinate it becomes. In examining a patient these facts should be borne in mind and every effort made to refrain from causing pain, as it is liable to induce reflex action which will mask the symptoms that are being investigated. "By mobilization and massage, pain is abolished in 80 per cent. of all cases of fractures managed according to this method."

Berliner Klin. Wochenschrift, February 4.

Oxygen in Exhaustion of the Neurons. MAX VERWORN.—In a study of fatigue and exhaustion Verworn shows that the neurons become fatigued and exhausted just like the muscles, and, like them, throw off waste matters, the products of their metabolism, which, if not removed, paralyze their further action. He relates experiments with frogs under the influence of strychnin. When so exhausted that no further convulsions were possible, he was able to restore the original energy to the convulsions by the establishment of an artificial circulation with salt solution mixed with pure oxygen. The former alone had no effect. He therefore concludes that exhaustion is due to the using up of the oxygen in the neurons and cells. He believes that conditions of fatigue and exhaustion are the chief factors in neurasthenia, or they may be the actual cause of the entire symptom-picture. His synthetic production of the conditions that create fatigue generated a symptom-complex closely resembling neurasthenia, and in all his experiments it was cured by the direct application of the oxygen in salt solution in artificial circulation.

Centralbl. f. Chir. (Leipsic), March 2.

Improved Spinal Cocainization. K. SCHWARZ.—Instead of cocain, Schwarz uses tropacocain, and reports that in sixteen serious operations performed with the subarachnoid injection of tropacocain, the analgesia was perfect and there was not a trace of the inconveniences observed after the use of cocain for the purpose, no pallor, vomiting, headache, vertigo nor rise in temperature. The general health was not affected in the slightest in any way, either during or after the operation. Analgesia to the knees was obtained with 3 cg. With 4 cg. he curetted an osteomyelitic hip-joint and removed sequestra in a very sensitive patient, without causing the least pain. The analgesia was complete for radical hernia and hemorrhoid operations, with 5 cg. This amount also proved sufficient in a uroseptic patient, 66 years of age, much debilitated, with complete retention of urine for two days in consequence of a traumatic stricture. The operation lasted two hours and the analgesia was complete to the end.

Restoration of Co-ordinated Movements After Nerve Crossing. R. KENNEDY.—Experiments on five dogs showed that the nerves supplying the flexor muscles in a foreleg could be severed and sutured to those supplying the extensors, with the result that in spite of this changed innervation, the animal gradually recovered the normal use of its limb and was able to make voluntary co-ordinated movements with it as before. The interval before function was re-established was the same as in case of simple section and immediate suture of the nerve. The nerve-centers which formerly innervated an antagonistic group of muscles now serve for the other group and the change extends even to the nerve centers, which change their task while retaining their excitability: the cortical centers duly impart impulses to the muscles that result in co-ordinated movements in their new peripheral domain. Applying these facts to human pathology, a woman was cured of facial spasms by uniting the peripheral stump of the severed facial nerve with the trunk of the spinal accessory, at the point where the latter emerges beneath the posterior belly of the digastric muscle. The interposing digastric prevented reunion of the severed ends of the facial nerve. Paralysis of the right side was the immediate result, but this gradually subsided. By the

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forty-ninth day there was reaction to faradic stimulation and partial closing of the lids. Fifteen months after the operation the face feels normal; there has been no recurrence of the spasm; the conjunctiva, muscles and lacrimal secretion are normal, and the movements of cheek and mouth muscles are satisfactory although not perfectly co-ordinated. There is no atrophy of the face; the tonicity of the muscles and their outlines are normal. There is muscular insufficiency in whistling, blowing and raising the eyebrows, but the labials are distinctly pronounced and the buccinator prevents accumulation of food between the jaw and cheek. When the arm is suddenly raised the face contracts on that side for a moment. The impulse for the trapezius is dispatched first to the face. The article concludes with the suggestion that section of a nerve supplying a paralyzed muscle, and union of this nerve with a neighboring nerve, even of an antagonistic group, may restore function to the paralyzed muscle.

Deu. Archiv f. Klin. Med. (Leipsic), December.

Experimental Study of Gout. M. FREUDWEILER.—Subcutaneous injection of sodium biurate produced lesions in animals, in Freudweiler's previous experiments, which corresponded anatomically in every particular to typical arthritic lesions in gout. The necrosis of the tissues was not a foreign-body necrosis but a secondary process, the result of the specific, toxic action of the urate. Under the administration of large amounts of acids or alkalies, the gout nodules rapidly disappear, and phagocytic processes are probably the chief factors in this retrogression of the nodules. His latest research tends to establish that in gout there is a permanent saturation of the organic juices with uric acid, entailing a constant tendency to local inflammation. If an inflammatory process culminates at a time when the organic juices happen to be supersaturated with uric acid—owing to improper diet or other causes—then the uric acid is deposited in crystals in the exudate of the inflammatory process. This is the origin of the typical gouty nodule with consecutive necrosis of the tissues involved. The precipitation of the uric acid relieves the organism from the superfluity, and no further trouble is experienced until again an acute local inflammatory process coincides with a maximal saturation with uric acid. The latter may also be deposited at points free from inflammation, where conditions are unfavorable for its retention in solution. The essence of gout, however, as a typical constitutional disease, is not the accumulation of uric acid in the fluids, but is to be sought at the points where uric acid is elaborated.

Deutsche Med. Wochenschrift, February 28.

Transmission of Tuberculosis by the Semen. F. F. FRIEDMANN.—The experimental research described has been aided by funds from the Bose endowment for scientific research. Friedmann has succeeded in transmitting tuberculous infection directly with the semen, and when the animals were killed six days later, the tubercle bacilli were found ensconced in the embryo, with none loose in the uterus or vagina. One or two drops of a very weak suspension of tubercle bacilli were injected into the vagina of female rabbits directly after coitus, following soon after a litter had been thrown. More than 500 longitudinal sections were made of the embryo and uterus of the animal killed the sixth day, before the embryo had become attached to the uterine wall in any way. The bacilli were found inside the cell of the embryo in every instance, and in one case a nest of them was discovered. The remainder of the bacilli had evidently been eliminated by the vaginal secretions, only two were found outside of the embryo and these were close to it. The question whether the non-motile bacteria were carried by the spermatozoa into the ovum is still undecided, but the experiments demonstrate beyond all doubt the possibility of the transmission of bacteria with the semen directly into the embryo, without the participation of the maternal organism in any way.

Suppuration in Typhoid Fever. A. PROCHASKA.—During the last three years this author has seen twenty-two cases of abscess formation in typhoid fever, mostly deep lesions, with multiple foci in several cases. One patient died. It is possible that pyogenic germs present in the body may acquire unwonted virulence under the influence of the typhoid infection. As such micro-organisms are swept away in the circulation, the abscesses may develop at points remote from their primary localization.

Spontaneous Gangrene in Young Men. WULFF.—Two cases are described in detail, but Wulff has observed five in all. Israel has also seen a number in the last few years. The patients were all Jews from Russian Poland, between 20 and 35 years of age, free from hereditary or syphilitic predisposition. All smoked cigarettes to excess, thirty or more a day for years. The gangrene first appeared in the toes in all but one case, and was preceded by years of rheumatic pains in the leg with chilliness, tingling and sluggish circulation when the leg was dependent. Wulff is inclined to attribute the etiology to abnormal vasomotor constriction, inducing secondarily the endarteritis and thrombosis which are the essential factors in senile gangrene.

Deu. Ztft. f. Ch. (Leipsic), January.

Rydygier's Experience with Operations on Stomach.—Since 1880 Rydygier has performed 100 operations on the stomach. The fatalities have been 17 in 25 cases of pylorectomy for cancer, and 4 in 7 non-cancerous affections; 16 in 38 gastro-enterostomies for cancerous and 5 in 26 for non-cancerous affections; 1 in 3 gastrostomies for cancer and 1 successful case of non-cancerous dilatation of the pylorus. The majority of the deaths were due to weakness and shock; 11 to pneumonia; 7 to peritonitis; 2 to hemorrhage and 7 to unknown causes.

Peptic Ulcer After Gastro-enterostomy. A. NEUMANN.—Seven cases have been recorded during the past eighteen months, in which a peptic ulcer has developed in the jejunum consecutive to gastro-enterostomy. Neumann has recently observed another case. The patient had suffered from chronic gastritis, dilatation and hyperchlorhydria, with stenosis of the pylorus. Gastro-enterostomy was done, and later an entero-anastomosis. He returned after a year with symptoms of a gastric ulcer adherent to the anterior wall of the abdomen. The tumor was excised. Six months later the cicatrix became perforated. The defect was closed with a pedunculated flap, the skin side toward the stomach. In a few days this flap was digested and the gap opened directly into the stomach and into the lumen of the intestine on each side. As the stomach and pylorus were now of normal shape and size—the stenosis having probably been spasmodic—the gastro-enterostomy was undone, the stomach closed, a portion of the jejunum resected and the abdominal defect closed with a piece of omentum inside and a skin flap outside. Neumann points out that the jejunum is not made to resist the action of acids and that, consequently, when brought directly in contact with them, as in a gastroenterostomy, favorable conditions for a peptic ulcer are produced. If the stenosis of the pylorus is not organic, jejunostomy should be preferred to gastro-enterostomy. Four of the seven cases mentioned above succumbed to the results of the perforation into the abdominal cavity.

Monatss. f. Prakt. Derm. (Hamburg), November.

Alcohol Pencils in Dermatology. P. G. UNNA.—These pencils are recommended by Unna as a very convenient method of applying alcohol in skin affections. He is convinced that we have in alcohol a harmless, mild and actively efficient disinfectant when used intermittently, not continuously. To prevent too rapid evaporation he applies it in the form of a thin, invisible varnish. This is accomplished by casting it in moulds with 5 or 6 per cent. of sodium stearate, in the shape of a pencil, and rubbing this pencil over the surface to be treated. The pencil is wrapped in tin-foil when not in use.

Muenchener Med. Wochenschrift, February 26.

Hereditary Transmission of Tuberculosis. J. GOLDSCHMIDT.—The English colony in Madeira was composed almost exclusively of persons with tuberculosis seeking a temperate climate. It has numbered about 600 souls, and yet, during the entire 19th century, only one of the descendants died of pulmonary tuberculosis, possibly acquired in a residence of several years abroad. The community now consists of about

150 persons. In contrast to this experience of the non-transmissibility of tuberculosis from the progenitors, Goldschmidt cites twenty-eight families of various nationalities in which both parents were free from the slightest trace of tuberculosis. In 21 of the families, all the children died of tuberculosis between 15 and 35 years of age; in 5 others most of the children died, and in 2 others two children in each were affected with a tubercular affection of the bones. He points out that in 21 of these families the fathers were syphilitic. There were only 8 abortions in the record of all the families. He suggests that the paternal syphilis might have induced a predisposition to tuberculosis. He also is inclined to believe that the parental tuberculosis in the Madeira colony conferred a sort of immunity on the children.

Jolles' Improved Ferrometer.—Comparison of the readings of the hemometer and of the ferrometer affords valuable information in many cases, not to be derived from either alone. The hemometer shows higher and lower amounts of hemoglobin in icterus, corresponding to the progress and subsidence of the affection. The more intense the icterus the greater the difference between the readings of the hemometer and of the ferrometer. In hemorrhagic diseases the hemometer indicates a high figure, while the blood-iron is diminished both comparatively and absolutely. Two periods in childhood seem to be distinguished by a special abundance of iron in the blood, the period of transition from nursing to a mixed diet and puberty. It is important in treating various affections to determine the amount of blood-iron as well as the hemoglobin and the number of red corpuscles. For these and other reasons Jolles considers his improved ferrometer a valuable contribution to scientific methods of investigation. He has simplified and adapted it to Fleischl's hemometer, so that the latter instrument with a slight addition, can be made to serve two purposes. The blood is evaporated, incinerated and treated with potassium sulphate as by the original method. One of the cylinders is placed in front of the glass wedge of the hemometer and the other over it. The wedge is then moved along until the fluid in both tubes is of the same color. The illumination must be from a candle or lamp, not an electric light. It should shine on the reflector only, and he recommends a covered box for the lamp, open at the back, with one small square aperture opposite the reflector. This improved ferrometer is so simple and so easily managed that he trusts it will be found of general clinical utility. He has already come to the conclusion that the amount of blood-iron in normal conditions averages higher than the figures he has previously announced—.0413 to .0559 in 100 c.c. of blood.

Therapeutische Mon. (Berlin), January and February.

Treatment of Peritonitis with Alcohol Compresses. MEYER.—The advantages of local application of alcohol have been proclaimed by Buchner and others from time to time. By the influence of the alcohol on the nerves of the affected region, strong hyperemia is induced and leucocytes charged with bactericidal enzymes are attracted to the spot and, by their proteolytic action, may destroy the elements of the cutis and lead to the perforation of the purulent collection. Meyer describes a severe case of tubercular peritonitis in which circumstances rendered surgical intervention impracticable. He applied compresses of alcohol, and in two weeks fluctuation was evident and a week later pus perforated through the umbilicus. The child recovered and has gained remarkably in weight.

Salol in Diabetes. TESCHEMAYER.—In accordance with Ebstein's advice, 1 gm. of salol was administered four times a day, to eight diabetics. In three severe cases no effect was perceptible, but in the others the sugar vanished completely from the urine during the treatment and for the several days afterward before the patients were lost to view. While the urine was under the influence of the salol, the plane of polarization was deflected to the left.

February.

Igazol in Treatment of Tuberculosis. HOFFNER AND BEERWALD.—The communication of the first writer reports negative results in ten cases from the action of Cervello's method of treating pulmonary tuberculosis with iodoform-formaldehyde, but Beerwald, on the other hand, asserts, from an experience with twelve patients, that it is the best of all methods known to date for treating bronchitis with secretion, whether tubercular or not. Ten of his patients were very much improved by the treatment.

[According to Ehrenfeld, in the *Wien. Med. Woch.* (January 26 and February 2), thirty-four patients with pulmonary tuberculosis—all severe cases—were treated according to Cervello's method inhalations of iodoform-formaldehyde-igazol. Improvement was evident in 53 per cent., including 4 clinical recoveries, 8 marked improvements, and 6 patients somewhat benefited; 8 patients died.—ED.]

Therapie Der Gegenwart (Berlin), February.

Quinin in Typhoid Fever. C. BINZ.—To supplement Erb's communication on this subject, abstracted in THE JOURNAL of February 9, p. 412, Binz recalls his experience during the Franco-German War, when he treated some of his soldier-patients with quinin and others without. Of the latter, 11 out of 46 died, a mortality of 23.81 per cent., while only 6 of the 97 to whom he administered 1 gm. of quinin every evening died. He always prefers the hydrochlorate to the sulphate, as it is more easily dissolved and absorbed in the stomach.

The "Klopfen" Method of Treatment of Pulmonary Tuberculosis. J. FRIEDLAENDER.—An unscientific work has recently been published proclaiming the advantages to be derived from slapping the thorax all over with a silver paper-cutter. Friedlaender has been making a scientific study of the method as practised empirically for years by the author, Erni, and finds that it is actually a powerful means of mechanically stimulating, shaking up the stagnant conditions, and thus promoting spontaneous healing of tubercular processes. The thorax is bared and greased. The silver knife is 1.5 cm. wide, and weighs 100 gm. It is held with the wrist loose and allowed to fall at rhythmic intervals on the surface of the thorax, going systematically over the entire expanse, front and rear, avoiding the sensitive points, the mamma, sternum, clavicles and spine. The sitting lasts ten to fifteen minutes with a respite of two or three, repeated every second day for ten to fifteen times and resumed after a pause of a few weeks. The skin smarts during the slapping, but it is followed by an agreeable glow. The respiratory symptoms are improved at once, expectoration promoted and suggestion shares in the general benefit that follows. A local reaction on the part of the lung tissues is evident in many cases, manifested by symptoms that suggest "a fresh cold," a foreign-body irritation from the increased throwing-off of the waste products. When this passes away, in a few days, it leaves the patient unmistakably improved in every respect. He observed that in 39 out 46 patients with hemoptysis the hemorrhages did not recur afterward, but in the 7 others the tendency to hemorrhage was not affected. In patients with hemoptysis, Friedlaender would avoid the vicinity of the lesion and, in fact, he regards the procedure as a general rather than a local measure.

Applications of Cold as a Cure for Pruritus. G. KLEMPERER.—The genital pruritus of diabetes, icterus, neurasthenia or senility is frequently arrested by applying an ice-bag to the abdomen or chest, or by spraying with ethyl chlorid. The local anesthesia of the spot thus treated induces reflex inhibition which may check or relieve the general pruritus for several hours.

Wiener Med. Blaetter January 24.

New Method of Reducing Obesity. W. MLADEJOVSKY.—Very small doses of thyroid extract were combined with quinin, theobromin and a course of Marienbad water. The results were surprisingly satisfactory. The patients lost one to three kilos. a week. Many of them had tried numerous other methods of treatment in vain. The thyroid tablets were taken on an empty stomach, never more than two tablets of 30 cg. a day, followed by the water. No inconveniences were observed in any case, and all the patients have continued in good health.

Lo Sperimentale (Florence), LIV, 5.

Vitality of Isolated Skin Flaps. P. PEZZOLINO.—Krause-flaps from dogs, kept in salt solution from twenty-four hours

to six days, retained their vitality and healed in place on aseptic granulating surfaces. Even after ten days some of the cells were still viable and mitosis promptly commenced. Flaps kept at the freezing-point retained their vitality twenty-four hours longer than those kept at room temperature. Dry flaps were much less satisfactory. The maximum of preservation of vitality was 264 hours.

Revista de Medicina Tropical (Havana), I, 6.

Inguinal Adenopathy. R. MENOCAL.—Attention is called to the frequency of ganglionary adenopathy in the tropics, aside from that of venereal or established tubercular origin. They have no significance for the diagnosis of deep-seated malignant disease. Menocal has operated on 59 patients. In 30 the adenopathy was preceded by attacks of lymphangitis, ecthyma of the ankles or interdigital eczema; in ten, by traumatism of the feet or ankles. The hypertrophy was considerable, and in a third of the cases was accompanied by acute or chronic adenophlegmons. Unless the hypertrophied ganglia are excised, ulceration or an interminable fistula is liable to persist.

Negative Diazo Reaction in Yellow Fever. A. D. ALBERTINI.—The diazo-reaction does not occur in typical cases of yellow fever without complications. It was observed in only ten out of 142 cases of the disease, and they were all complicated by pneumonia, typhoid or some other affection.

Queries and Minor Notes.

"IF I SHOULD DIE TO-NIGHT."

CEDAR FALLS, IOWA, March 2, 1901.

To the Editor:—Will you please tell me where I can get the article referring to a doctor and his creditor, which runs something like the following: "If I should die to-night and you should come to pay that ten dollars that you owe," etc. I think it is a parody on the poem, "If I Should Die To-night." F. N. M.

ANS.—The reference is probably to Ben King's poem, "If I Should Die To-night":

> "If you should come with deepest grief and woe,
> And say here's that ten dollars that I owe,
> I might rise up in my great white cravat
> And say, What's that?"

We believe that this poem itself was a parody on some former one of the same title. It has been parodied also so as to refer to doctor's bills, but we can not put our hand on the reference. Possibly some of our readers can assist us and our correspondent. The parody was published in a medical journal quite recently.

PRACTICE IN CALIFORNIA AND WASHINGTON.

UBLY, MICH., March 11, 1901.

To the Editor:—Will you advise me as to the requirements for registration for the practice of medicine in California and Washington? To whom can I write for full particulars? J. S. C.

ANS.—The requirements were published in THE JOURNAL of February 23. There is a law now pending before the California legislature requiring examination, similar to that of Washington. The new law in Washington, just passed over the governor's veto, does not materially alter the situation so far as physicians coming into the state are concerned. For further information address the secretaries of the state boards, Dr. C. C. Wadsworth, 1104 Van Ness Ave., San Francisco, Cal., or Dr. W. G. Tucker, Port Townsend, Wash.

PRACTICE IN ALABAMA.

BUNCETON, MO., March 9, 1901.

To the Editor:—Please give me the laws regulating the practice of medicine in Alabama. C. P.

ANS.—An examination before the State Board of Examiners or before the county boards. A diploma is necessary if the examination is passed under a county board, but is not absolutely so before the state board.

PRACTICE IN IDAHO AND SOUTH DAKOTA.

SUGAR GROVE, VA., March 4, 1901.

To the Editor:—What are the medical practice laws of Idaho, Washington and South Dakota? H. C. C.

ANS.—In Idaho make application to the STATE MEDICAL EXAMINING BOARD, upon blanks which will be furnished, transmitting the diploma with an affidavit as to its ownership and identity, and that the applicant is a citizen of the United States. If the diploma is found satisfactory, the license will be given after examination, for which the fee is $25. For Washington see above. In South Dakota, graduation from a lawful medical college, after three full courses of six months each, no two in the same year, a certificate of good moral character and of not being a habitual drunkard, and a fee of $5 are required. If the graduation was prior to 1893, the requirement of a three-year-course is not insisted on.

HOUSEHOLD MEDICINE.

LEE CENTER, ILL., March 7, 1901.

To the Editor:—Will you give me the name, publisher and price of a household medical book suitable to place in the hands of a young woman, and which is in harmony with modern medicine and medical ethics. C. M. C.

ANS.—We do not know of any work on household medicine altogether suitable for endorsement.

PRACTICE IN INDIANA.

CHICAGO, ILL., March 10, 1901.

To the Editor:—Will you kindly give the requirements for the practice of medicine and surgery in Indiana? A. T.

ANS.—Applicants for licenses to practice medicine in Indiana must be bona fide residents of the county and state; must possess the necessary application blank from the county clerk, which, properly filled, with diploma and fee of $10, must be sent to the State Board of Medical Registration, Room 120, State House, Indianapolis, Ind. If satisfactory, the board will issue its certificate, and on presentation of this to the county clerk a license will be granted. If not satisfactory, an examination must be passed, for which the fee is $25. For further information as to rulings of the board, etc., address Dr. W. T. Curryer, secretary of the State Board of Registration, Indianapolis, Ind. A law requiring examination in all cases is now pending in the legislature.

PRACTICE IN WISCONSIN.

PHILADELPHIA, PA., March 12, 1901.

To the Editor:—Will you give me information as to the laws governing the practice of medicine in Wisconsin, also the name of the secretary, if there is a state board of medical examiners? E. A. R.

ANS.—In Wisconsin all persons commencing the practice of medicine and surgery must submit to examination or present a diploma from a medical college that requires at least three courses of not less than six months each before graduation, no two of the said courses to be taken within any twelve months. The fee for examination is $10, but if a satisfactory diploma is presented the fee will not exceed $5. The license must be recorded in the county where the practice is intended. A certificate from another state with equal qualifications may be accepted if the Board of Registration chooses. The Board of Medical Examiners holds regular meetings on the second Tuesdays in July, at the Park Hotel, in Madison; in October, at the Athearn Hotel, in Oshkosh, and in January and April, at the Hotel Pfister, in Milwaukee. All applicants for licenses should apply to the secretary, Dr. H. M. Ludwig, Richland Center, Wis., or at the addresses given, prior to meetings.

DRAINAGE OF LACRIMAL CANAL.

BOSTON, MASS., March 12, 1901.

To the Editor:—Please let me know the name of the doctor who first advised draining the lacrimal canal by means of a silk thread knotted together to a loop, which should be drawn, with the knot, through the canal once or twice a day. I have recently read about it, intended to relate it in a foreign journal, but can not find the doctor's name and residence. R. H.

ANS.—The article referred to was written by Erasmus A. Pond, and published in the *Medical Record* of February 2. It was noticed in THE JOURNAL of February 9, p. 469.

THE INDIVIDUAL COMMUNION CUP.

FORT WAYNE, IND., March 12, 1901.

To the Editor:—I am desirous of obtaining the name and address of the original experimenter in the individual communion cup agitation. He read a paper before the Section on State Medicine, at Philadelphia, in 1897, but I am unable to find the article. Would you kindly give me this address, or tell me where I can get it? L. P. D.

ANS.—The paper is probably that of Dr. Howard S. Anders, published in THE JOURNAL of Oct. 16, 1897. In it he gives the history of the original agitation and does not credit himself with the first publication in regard to it, though his own paper appeared in the same year—1894—as that of Dr. C. H. Forbes, to whom he refers. The address of Dr. Anders is 1836 Wallace St., Philadelphia, Pa.

PHYSICIANS AND THE AUTOMOBILE.

CHATTANOOGA, TENN., March 11, 1901.

To the Editor:—I notice an inquiry in the issue of THE JOURNAL dated March 9, from Dr. H. S. J., Lead, S. D., relative to the best automobile to be used in the physician's practice, and in answer I wish to say that I have tried the three different kinds of motive power and find that the steam vehicle is by all means the nicest and most practicable for use under all circumstances, because it can be depended on at all times. It is freer from noise than the electric or gasoline-propelled machine, will climb any grade and never balks, can be repaired by any mechanic, is easily and quickly

gotten ready and not easy to get out of order. I have a steam vehicle with which I have climbed Lookout Mountain, Missionary Ridge, Walden's Ridge, been all over Chicamauga Park a number of times, been over all kinds of country roads, and fifty-six miles into the country on one charge. All of these trips were made without a single mishap. There is not the vibration or jolting peculiar to the gasoline-propelled machine, and it glides along as easily as could be desired. The electric vehicle can only be used successfully in cities, and then where stations for recharging are convenient. Gasolin can be gotten at any country store; that and water is all you need for a steam vehicle. I have made over thirty miles an hour with mine, have had it for nine months in constant use, while it is as good as new now and has cost me nothing for repairs. D. E. N.

New Patents.

Patents of interest to physicians, etc., February 19 and 26:

668,164. Making ammonia derivatives of saccharin. Leon Cerf, Lyons, France.

668,488. Amalgam squeezing machine. James V. Coleman, San Francisco, Cal.

668,466. Nurses' Companion Case. Margaret A. Taylor, New London, Conn., and P. A. Murphy, Lynn, Mass.

34,116. Design: Water-bag. Christian W. Meinecke, Jersey City, N. J.

668,671. Obtaining sodium sulphate from brines. Harry Baker and E. Haworth, Runcorn, England.

669,020. Spray tube for nebulizers. William and J. Bockel, Philadelphia, Pa.

668,911. Surgical instrument. George Ermold, Elizabeth, N. J.

668,636. Douche bench. William T. Gregg, Yonkers, N. Y.

668,647. Ecraseur. Max Jaenicke, Gorlitz, Germany.

669,034. Surgical instrument. James S. Manly, Cripple Creek, Colo.

668,823. Folding tongue depresser. Charles J. Pilling, Philadelphia, Pa.

668,529. Device for treating diseases of the ear. Mike Polich, Riverside, Cal.

668,661. Electric bathing apparatus. Oscar Schneider, New York City.

668,762. Disinfecting apparatus. Thomas N. Thompson, Scranton, Pa.

Copies of above patents may be obtained for 10 cents each by addressing John A. Saul, Solicitor for Patents, Fendall Building, Washington, D. C.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 28 to March 6, 1901, inclusive:

George W. Adair, major and surgeon, U. S. A., leave of absence granted.

Charles H. Andrews, captain and asst.-surgeon, Vols., recently appointed, and now in San Francisco, Cal., to report for transportation to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

J. Newton Boyce, acting asst.-surgeon, from duty on the transport *McClellan*, to San Francisco, Cal., to accompany troops to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

Louis Brechemin, major and surgeon, U. S. A., from Fort Logan, Colo., to San Francisco, Cal., en route to Manila for duty in the Division of the Philippines.

George E. Bushnell, major and surgeon, U. S. A., on expiration of his present sick leave, is assigned to duty at Fort Logan, Colo.

Jerome S. Chaffee, lieutenant and asst.-surgeon, U. S. A., recently appointed, is assigned to duty at Columbus Barracks, Ohio.

Harold W. Conger, captain and asst.-surgeon, Vols., recently appointed, and now at San Francisco, Cal., to report for transportation to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

G. S. Driver, acting asst.-surgeon, leave of absence granted.

Matthew Leepere, captain and asst.-surgeon, Vols., recently appointed, and now at Fort Crook, Neb., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Benjamin F. Pope, lieutenant-colonel, deputy surgeon-general, U. S. A., from duty at the Presidio of San Francisco, Cal., to proceed on or about May 1, 1901, to Manila, P. I., for assignment as chief surgeon of the Division of the Philippines.

Paul F. Straub, major and surgeon, Vols., now at San Francisco, Cal., is relieved from further duty in the Division of the Philippines and assigned to duty at Fort Crook, Neb.

Henry D. Thomason, major and surgeon, Vols., recently appointed, to proceed from Albion, Mich., to San Francisco, Cal., reporting to the commanding general, Department of California, for temporary duty, at the completion of which he will proceed to Manila, P. I., for duty in the Division of the Philippines.

Charles F. Williams, acting asst.-surgeon, from Yorkville, S. C., to temporary duty at Fort Screven, Ga.

Robert H. Zauner, major and surgeon, Vols., from temporary duty at Columbus Barracks, Ohio, to rejoin his station, Fort Du Pont, Del.

Navy Changes.

Changes in the Medical Corps of the Navy for week ending March 9, 1901:

Asst.-Surgeon O. M. Eakins, detached from the *Ajax*, when put out of commission, and ordered home to wait orders.

Surgeon F. J. B. Corderio, detached from the *New Orleans* and ordered to the *Buffalo*.

P. A. Surgeon R. Spear, detached from the *Buffalo* and ordered to the *Isla de Luzon*.

P. A. Surgeon R. M. Kennedy, detached from the *Newark* and ordered to the *Bennington*.

Asst.-Surgeon J. J. Snyder, detached from the *Isla de Cuba* and ordered to duty with a detachment of marines at Pollock, P. I.

Asst.-Surgeon M. V. Stone, detached from the *Isla de Luzon* and ordered to the *Buffalo*.

Asst.-Surgeon J. H. Payne, Jr., detached from duty at Pollock, P. I., and ordered to the *Isla de Cuba*.

Asst.-Surgeon E. O. Huntington, detached from the *Bennington* and ordered to the *Newark*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the twenty-one days ended March 7, 1901:

Surgeon George Purviance granted leave of absence for one day.

Surgeon C. T. Peckham, granted leave of absence for twenty days on account of sickness.

P. A. Surgeon J. A. Nydegger, upon expiration of present leave of absence, to report at Washington, D. C., for orders.

P. A. Surgeon J. A. Nydegger to proceed to Cape Charles Quarantine as inspector.

P. A. Surgeon H. W. Wickes, granted leave of absence for thirty days from March 11.

Asst.-Surgeon F. E. Trotter, upon being relieved by Asst.-Surgeon T. D. Berry, to proceed to Havana, Cuba, and report to the chief quarantine officer for duty.

Asst.-Surgeon T. D. Berry, relieved from duty at Havana, Cuba, and directed to proceed to Cienfuegos, Cuba, relieving Asst.-Surgeon F. E. Trotter.

Acting Asst.-Surgeon B. Y. Harris, granted leave of absence for ten days.

Acting Asst.-Surgeon W. H. Marsh, granted leave of absence for four days from February 27.

P. A. Surgeon T. B. Perry, granted leave of absence for thirty days from March 12.

P. A. Surgeon B. W. Brown, directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon J. A. Nydegger, to assume temporary command of the Cape Charles Quarantine station during the absence of Asst.-Surgeon C. W. Wille.

Asst.-Surgeon Taliaferro Clark, granted seven days' extension of sick leave, from March 8.

Asst.-Surgeon F. E. Trotter, relieved from duty as quarantine officer at the port of Cienfuegos, Cuba.

Asst.-Surgeon C. W. Wille, granted leave of absence for seven days from March 4.

Asst.-Surgeon T. D. Berry, detailed as quarantine officer at the port of Cienfuegos, Cuba.

Asst.-Surgeon J. D. Long, relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to New York City and report to Surgeon L. L. Williams, Immigration Depot, for duty.

Hospital Steward W. F. Macdowell, granted leave of absence for thirty days from March 20.

Hospital Steward F. S. Goodman, relieved from duty at Havana, Cuba, and directed to proceed to Washington, D. C., and await orders.

Hospital Steward Walter Newbern, granted leave of absence for thirty days from March 5.

Health Reports.

The following cases of smallpox and yellow fever were reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended March 9, 1901:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Feb. 23-March 2, 1 death.
California: San Francisco, Feb. 18, 8 cases.
District of Columbia: Washington, Feb. 23-March 2, 7 cases.
Florida: Jacksonville, Feb. 23-March 2, 3 cases.
Illinois: Cairo, Feb. 16-23, 6 cases.
Iowa: Ottumwa, Feb. 2-9, 1 case.
Kansas: Lawrence, Feb. 23-March 2, 2 cases; Wichita, Feb. 23-March 2, 12 cases.
Kentucky: Lexington, Feb. 23-March 2, 2 cases.
Louisiana: New Orleans, Feb. 23-March 2, 7 cases, 2 deaths.
Michigan: West Bay City, Feb. 22-March 2, 5 cases.
Minnesota: Winona, Feb. 23-March 2, 12 cases.
Nebraska: Omaha, Feb. 22-March 1, 5 cases.
New Hampshire: Manchester, Feb. 23-March 2, 27 cases.
New York: Elmira, Feb. 23-March 2, 1 case; New York City, Feb. 23-March 2, 64 cases, 11 deaths; Yonkers, Feb. 22-March 1, 1 case.
North Carolina: Charlotte, Feb. 1-28, 16 cases.
Ohio: Ashtabula, Feb. 23-March 2, 2 cases; Cincinnati, Feb. 22-March 1, 2 cases; Toledo, Feb. 23-March 2, 8 cases; Youngstown, Feb. 23-March 2, 2 cases.
Pennsylvania: Allegheny, Feb. 23-March 2, 2 deaths; Philadelphia, Feb. 23-March 2, 1 case; Pittsburg, Feb. 23-March 2, 4 cases.
Tennessee: Memphis, Feb. 23-March 2, 16 cases; Nashville, Feb. 23-March 2, 17 cases.
Utah: Salt Lake City, Feb. 23-March 2, 31 cases.
West Virginia: Huntington, Feb. 23-March 3, 1 case.

SMALLPOX—FOREIGN.

China: Hongkong, Jan. 15-22, 1 case.
England: Liverpool, Feb. 8-16, 2 cases; London, Feb. 8-16, 1 case.
Scotland: Dundee, Feb. 8-16, 6 cases; Glasgow, Feb. 15-22, 20 deaths.
Mexico: Vera Cruz, Feb. 19, 300 cases; Yucatan, Feb. 20, epidemic.
Russia: St. Petersburg, Feb. 2-9, 4 cases, 1 death; Warsaw, Jan. 26-Feb. 2, 8 deaths.
Turkey in Asia: Jaffa, Jan. 1-15, epidemic.

YELLOW FEVER.

Cuba: Havana, Feb. 17-24, 3 deaths.

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